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HYPOTHERMIA IN THE MANAGEMENT OF THE POOR-RISK PATIENT UNDERGOING MAJOR SURGERY

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• *By comparing the electrolytic pattern, the ability to handle fluids including urinary output, the steroid levels, the eosinophil count, oxygen consumption, and the amounts of anesthesia required in patients undergoing surgery, it appears that with the use of moderate hypothermia the stress of both anesthesia and surgery are reduced. Patients who were considered poor surgical risks tolerated major operative pocedures better when operated on while under hypothermia.*

Moderate hypothermia appears to reduce the stress associated with general anesthesia and the stress from operative procedures.[1] It has, therefore, been applied as an adjunct to general anesthesia in the poor-risk patient. The effect of hypothermia upon various aspects of metabolism has been investigated, and the results provide the basis for this paper.

In a total of 76 cases, operation has been performed with the patient under moderate hypothermia, with use of the slow cooling technique. Temperatures have been reduced in all cases to between 28 and 32 C (82.4 and 89.6 F), the average being 30 C (86 F). Each patient was anesthetized and then placed on a water-cooled mattress. Trimethaphan (Arfonad) camphorsulfonate was given in an infusion to prevent reflex vasoconstriction and, thus, to facilitate cooling.

The ages of these patients varied from 16 hours to 90 years. Over half of the patients were over 50 years of age. Myocardial disease was present in 37 cases. All of the 76 patients included in this study underwent major resective surgery. In each instance, the patient was considered to be a poor operative risk for the procedure contemplated.

Effect of Hypothermia

Cerebral Metabolism.—Since the brain is dependent on the blood flow from minute to minute and cannot contract an oxygen debt, any influence that will decrease the oxygen requirements of the brain should be of value. (Body tissues such as a muscle can contract an oxygen debt because they have a capacity for anaerobic metabolism for short periods of time, but the central nervous system cannot contract an oxygen debt because it functions entirely on aerobic metabolism.) Hypothermia produces a variable reduction of cerebral metabolism. Several factors, such as the degree of cooling, the age of the patient, and the state of health of the patient, interact so that the amount of reduction of cerebral metabolism cannot be predicted. Moderate hypothermia (temperature between 32 and 30 C [89.6 and 86 F]) lowered cerebral metabolism from 40 to 75%[2] in all cases (fig. 1).

Postoperative Stress Reaction.—An early clinical observation made in patients undergoing surgical procedures with the use of hypothermia was an altered postoperative appearance of the patient. Instead of having a "washed-out" appearance for a few days after surgery, the patients reacted like patients who had undergone a minor procedure instead of a major operation. The patients excreted a large volume of urine postoperatively, far in excess of the low output of urine usually seen during the immediate postoperative period (fig. 2).

This altered postoperative stress reaction was investigated in a selected group of patients. Plasma 17-hydroxycorticosteroid levels were determined preoperatively, during the induction of anesthesia, at hourly intervals during the operative procedure, and at regular intervals during the first 48 hours postoperatively until the levels returned to normal.[3]

Patients operated on without hypothermia showed the following response: Induction of anesthesia produced a sharp rise in the plasma 17-hydroxycorticosteroid level. This was followed by a further increase during the operative procedure, which was main-

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tained during the first few hours during the postoperative period. In most instances, the steroid levels returned to normal within 24 to 48 hours after the completion of the operation. Patients operated on while under hypothermia showed a similar response, with a tendency toward a delay in the elevation of the steroid levels and often a response of less magnitude (fig. 3).

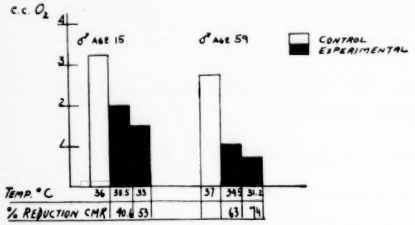

Fig. 1.—Graph showing comparative effect of hypothermia on cerebral metabolic rates, measured in cubic centimeters of oxygen per 100 Gm. of brain weight per minute in 15-year-old and 59-year-old male patients. Body temperature was reduced by 2.5 C (4.5 F). Data from Albert and Fazekas.[2a]

Serial determinations of eosinophil counts failed to show any difference in patients operated on with or without use of hypothermia. In both groups, there was a marked fall in the eosinophil count during the operation.

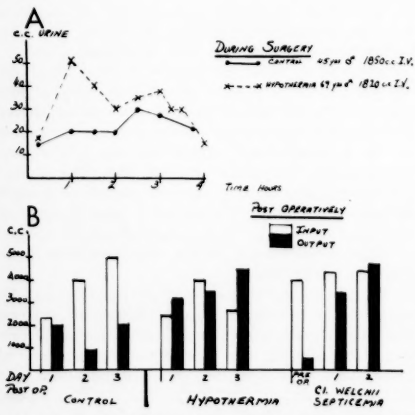

Fig. 2.—Graphs showing urine output during operation and during postoperative period in patients operated on while under and not under hypothermia. *A*, urine output during operation in a 45-year-old man operated on without hypothermia and in a 65-year-old man operated on while under hypothermia. *B*, average urine output in 20 patients.

Balance studies of sodium and potassium metabolism (fig. 4) indicated a postoperative urinary loss of sodium in the patients in whom hypothermia was induced instead of the expected retention. Potassium excretion is not appreciably influenced by the induction of hypothermia. This increased sodium excretion may account for the increased urine output.

Early in our experience with hypothermia, two of our patients developed low-sodium syndromes postoperatively. In these cases, administration of saline solution had been withheld, as is usually done during the first 48 hours postoperatively, and, because of this renal loss of sodium, there is a tendency for the patient to develop hyponatremia.

The effect of a 1,000-cc. water load on urine output was studied preoperatively and immediately after operation. Patients operated on without hypothermia showed water retention in response to a water load, while those operated on while under hypothermia had diuresis of water in response to this water load (fig. 5).

Observations During Anesthesia

Operations in the group of patients with cyanosis and congenital heart conditions are more safely performed with the patient under hypothermia.[4] By re-

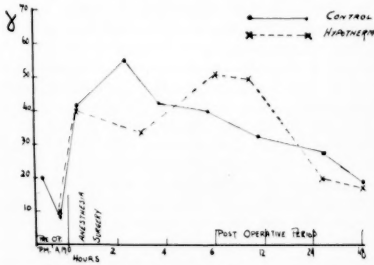

Fig. 3.—Mean levels of free 17-hydroxycorticosteroids in plasma of five patients operated on under hypothermia and five patients operated on without hypothermia. Patients selected were equal in age and physical status, and in the extent and severity of the surgical procedure performed.

ducing the body temperature, the oxygen consumption of the body and particularly that of the brain is reduced. With a reduced cerebral metabolic rate, a smaller amount of anesthetic is required to obtain surgical anesthesia.[5]

The amount of anesthetic required in a group of 40 patients was compared in patients undergoing two specific surgical procedures, subtotal gastric resection and radical hysterectomy. Ten patients of each group were operated on while under hypothermia and general anesthesia, and 10 patients of each group were operated on without hypothermia. The patients in whom hypothermia was induced required approximately half the amount of anesthetic as did the patients operated on without hypothermia. The value of using a reduced amount of anesthetic is apparent. The recovery period for the patients operated on without hypothermia averaged from one to two hours,

whereas those operated on while under hypothermia recovered immediately while still in the operating room.

The patients in whom hypothermia was induced presented no problem with regard to the maintenance of blood pressure level, pulse rate, and depth of anesthesia. Poor-risk patients tolerated extensive and traumatizing procedures well. The protection afforded these patients by the use of hypothermia prevented them from showing any ill-effects from acute episodes of blood loss during surgery. One may say that induction of hypothermia allows the anesthesiologist a wider range of safety during a major procedure in the poor-risk patient.

Prevention of Arrhythmias and Ventricular Hyperirritability

Ventricular hyperirritability and ventricular fibrillation are grave complications that may occur during hypothermia. In elderly poor-risk patients bouts of premature ventricular contractions may develop when the body temperature has been reduced as little as 1 to 2 C (1.8 to 3.6 F). In over half our cases, we observed premature ventricular contractions by the use of continuous electrocardiographic monitoring. Trimethaphan camphorsulfonate, administered as an infusion, 1:500, has proved to be effective in eliminating arrhythmias. We have been able to control ventricular hyperirritability by the administration of trimethaphan. Interestingly enough, on several occasions arrhythmias occurred when the patient had severe hypotension; the rapid administration of trimethaphan eliminated arrhythmia. This effect persisted even when the hypotension was controlled with the administration of vasopressors. The exact mode of action of trimethaphan is not known. It is a ganglionic blocking agent and a peripheral sympatholytic agent. The above observations indicate it has a beneficial action in patients with myocardial arrhythmias. This action may be by a depressant effect on the myocardium or an effect on the conduction system. Since it has a potent topical anesthetic effect on mucous membrane and a bitter taste like cocaine, its action on the myocardium may be similar to that of local anesthetics (fig. 6).

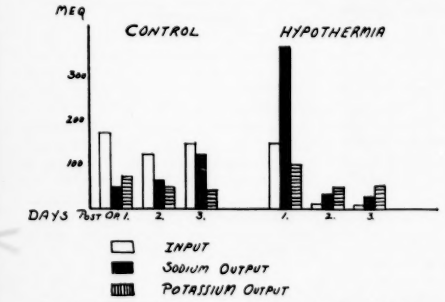

Fig. 4.—Graph showing average levels of sodium and potassium excretion in 10 patients operated on while under hypothermia and 10 patients operated on without hypothermia.

Report of Cases

CASE 1.—A male baby, weighing 2,494.8 Gm. (5 lb. 8 oz.), was brought to surgery 16 hours after a premature birth for correction of a bronchoesophageal fistula. The respiratory rate was 54 per minute, the pulse rate varied between 130 and 160, and the infant was mildly cyanotic. Roentgenographic examination revealed atelectasis in the right upper lobe. As cooling progressed, the pulse and respiratory rates slowed and the infant's color improved. The operative procedure was carried out successfully, the infant being given a 50:50 mixture of nitrous oxide and oxygen while an end-to-end esophageal anastomosis was done.

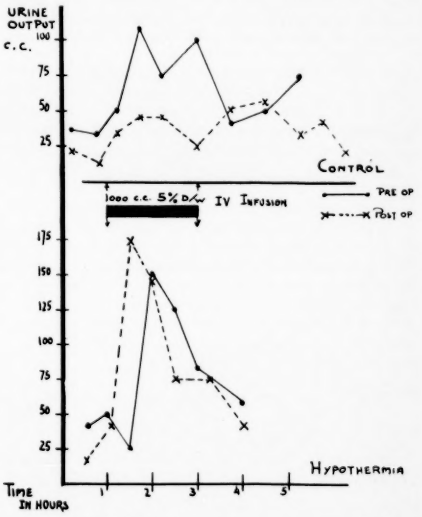

Fig. 5.—Graph showing average response to water load test conducted preoperatively and on the first postoperative day in 10 patients operated on while under hypothermia and 10 patients operated on without hypothermia. Each patient was given 1,000 cc. of 5% solution of dextrose and water.

Comment.—The patient had mixed cyanosis due to poor pulmonary exchange and poor oxygen uptake, with marked tachycardia. Improvement of cyanosis and tachycardia occurred with cooling.

CASE 2.—A 34-year-old woman, who was known to be a diabetic, developed postpartum gas gangrene of the uterus, with septicemia. Foul-smelling blood was expressed from the uterus at the time of delivery. Cultures of blood and subsequently of lochia demonstrated the presence of bacteria. Eleven hours after delivery, the patient became critically ill. The patient's temperature rose to 39 C (102.2 F), blood pressure level was 70/46 mm. Hg, and pulse rate 120. White blood cell count was 33,000 per cubic millimeter, with 88% polymorphonuclear leukocytes. Therapy with polyvalent antitoxin and antibiotics was instituted as soon as the diagnosis was established. Shortly thereafter, the blood pressure level was maintained without the administration of vasopressors, and the pulse rate increased to 132. The patient

was taken to the operating room for hysterectomy. The patient was cooled from 39 to 34 C (102.2 to 93.2 F), after which a total excision of the puerperal uterus was carried out. The patient's course during anesthesia and the postoperative period was uneventful.

Comment.—The patient had severe toxemia and shock. Hypothermia reduced metabolism and allowed vital signs to become stabilized.

CASE 3.—A 62-year-old man, known to have had a recent myocardial infarction, was admitted to the hospital for severe hemorrhage of the upper part of the gastrointestinal tract. He was obviously in shock on admission. Blood pressure level was 80/20 mm. Hg, and pulse rate was 135 per minute. On admission, the hematocrit value was 20% and remained low while the patient received multiple rapid transfusions of whole blood. Emergency surgery was indicated. Preoperative electrocardiographic examination confirmed the recent occurrence of posterior myocardial infarction and also showed multiple premature ventricular contractions indicating ventricular hyperirritability. Hypothermia was utilized in conjunction with general anesthesia. The patient's temperature was lowered to 32.4 C (90.32 F). Cardiac arrhythmia persisted during cooling, but it was eliminated when trimethaphan was administered intravenously. The patient tolerated the gastric resection well and had an uneventful postoperative course.

Comment.—In this case hypothermia permitted an uneventful operative course in a poor-risk patient with loss of blood that was properly replaced by transfusion during surgery.

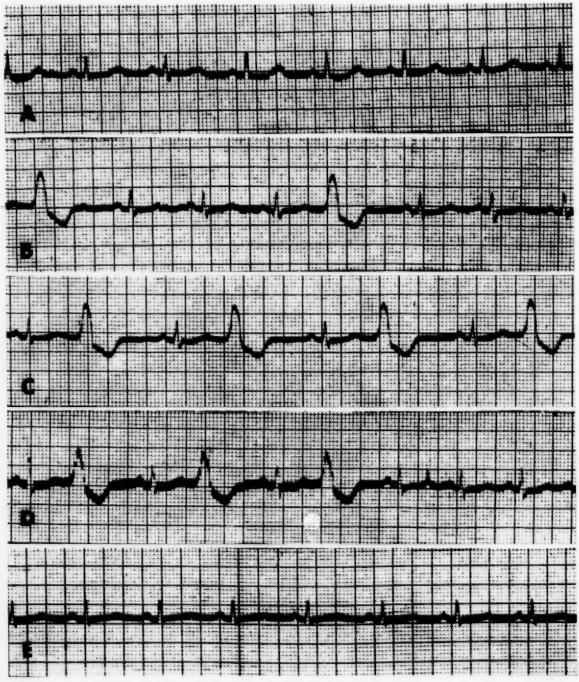

Fig. 6.—Electrocardiograms showing effect of trimethaphan on ventricular hyperirritability while the patient was under hypothermia (lead 2). *A*, after induction of anesthesia and start of cooling. Temperature was 37 C (98.6 F). *B*, after 30 minutes of cooling, premature ventricular contractions appear. Temperature was 35 C (85 F). *C*, premature ventricular contractions every other beat persisting. Infusion started at a rate of 120 drops per minute. *D*, note disappearance of premature ventricular contractions after the administration of trimethaphan for 70 seconds. *E*, normal electrocardiographic tracing persists throughout operation. The temperature level was 32 C (98.6 F).

Summary and Conclusions

Moderate hypothermia protects the brain against the occurrence of acute anoxia by reducing cerebral metabolic rate. When hypothermia is used, adrenal stress reactions are both reduced and delayed. Patients operated on while under hypothermia fail to demonstrate the usual retention of water and salt during the early postoperative period. Patients who were poor surgical risks tolerated major operative procedures better when operated on while under hypothermia.

An infusion of trimethaphan (Arfonad) camphorsulfonate, 1:500, prevents myocardial irritability during cooling and will eliminate arrhythmias due to myocardial hyperirritability.

Dr. Joseph F. Fazekas, Chief of Staff, District of Columbia General Hospital, supplied the data on cerebral metabolic rates. Dr. H. Bacchus made the determinations of 17-hydroxycorticosteroids in plasma.

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ANEURYSM OF THE AORTA TREATED BY RESECTION

ANALYSIS OF THREE HUNDRED THIRTEEN CASES

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• *Aortic aneurysms, whether sacciform, fusiform, or dissecting, can now be corrected surgically by techniques here described. The diseased part is extirpated, and function is restored either by repairing the remaining part or by using homografts or suitable plastic substitutes. The results of 313 such operations are given. In 83 cases the aneurysms involved the thoracic aorta and in 230 the abdominal aorta. The hazards of the operation are greatest for aneurysms lying closest to the origin of the aorta and diminish as the distance from the heart increases. For operations on segments proximal to the origin of the left subclavian artery a temporary shunt must be used around the occluded segment; for operations distal to this point but proximal to the seventh thoracic vertebra hypothermia effectively prevents ischemic complications. Special precautions are necessary also in the abdominal aorta, where the possibility of causing fatal ischemic damage to important viscera by interrupting flow through the celiac, superior mesenteric, and renal arteries must be avoided. With improvements in technique the operative mortality has been steadily reduced and complete relief of symptoms has usually been achieved. There has been a significant increase in the life expectancy of patients with a disease that until recently was progressively disabling and ultimately fatal.*

Aneurysm of the aorta has long been recognized as one of the most serious forms of disease, producing progressively disabling symptoms and, ultimately, death from rupture and hemorrhage. Indeed, the average period of survival after diagnosis is from one to two years, with fatal rupture then occurring in most patients. Although development of an effective method of management of this grave disease has been sought actively for nearly a century, only within the past few years has satisfactory therapy been devised. This consists essentially in extirpation of the diseased part, with restoration of normal function by repair or replacement with homograft. Sufficient experience has now accumulated to provide convincing evidence of the value and efficacy of this form of treatment.

During the five-year period since our first successful resection of an aneurysm of the aorta, we have employed this method of therapy in 313 cases, in 83 of which the aneurysms were located in the thoracic aorta and in 230 in the abdominal aorta (see table). This report is concerned with certain observations derived from analysis of this experience. Since the nature and location of the aneurysm have an important bearing upon both the application and results of treatment, the cases have been classified into two broad categories: those involving the thoracic aorta and those in which the aneurysms were located in the abdominal aorta. For similar reasons, the former category has been subdivided into three groups: sacciform, fusiform, and dissecting aneurysms.

Aneurysms of the Thoracic Aorta

Sacciform Aneurysms.—Sacciform aneurysms are usually of syphilitic origin and arise in the region of the aortic arch. As emphasized previously, the pathological features of this lesion provide favorable circumstances for its surgical removal.[1] Thus, owing to the fact that the neck in these aneurysms is relatively small and the leathery consistency of the surrounding aortic wall is suitable for suture, the lesion may be extirpated readily by application of an occluding clamp tangentially across the neck of the aneurysm without encroachment upon the aortic lumen. This obviates temporary arrest of the circulation, which, at this level of the aortic arch, could have serious ischemic consequences. Among the 24 patients treated in this manner there were nine deaths (see table). The major cause of death was heart failure, and the second most important complication contributing to the fatalities was cerebral thrombosis. It would also appear that the more proximal the aneurysm arises the higher is the risk of operation. This is suggested by the fact that seven of the nine deaths occurred among the 15 patients with aneurysms arising in the ascending aorta.

Fusiform Aneurysms.—Because in fusiform aneurysms the lesion involves the entire circumference of the aorta for a varying distance, excisional therapy necessitates resection of this diseased segment of aorta, with restoration of continuity by means of an aortic homograft or a suitable plastic substitute. The technical performance of this procedure thus imposes additional problems arising from the necessity for temporary arrest of aortic circulation and consequent ischemic effects on the tissues, the most important of which are the brain and spinal cord. Several approaches may be employed in overcoming this problem, the choice of approach depending primarily upon the location of the lesion. These approaches include use of temporary shunts around the occluded segment of aorta, hypothermia, and certain steps in the operation designed to minimize the period of circulatory arrest. The first method is indicated in cases in which the aneurysm is located proximal to the origin of the left subclavian artery. Under these circumstances, a temporary shunt must be used

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around the occluded segment, not only to prevent ischemic damage to the brain and spinal cord but also to prevent heart failure from left ventricular strain resulting from occlusion of the ascending aorta.

For lesions located in the segment of aorta between the origin of the left common carotid artery and the seventh thoracic vertebra, hypothermia appears to be an effective means of preventing ischemic complications. Thus, among 37 patients in our series in whom the aneurysm was located at this level, including 12 with dissecting aneurysms, hypothermia was employed in 30, and only one of these patients showed any manifestations of ischemic damage to the spinal cord. On the other hand, of the remaining seven patients, all of whom were operated upon early in our experience and without the use of hypothermia, three showed manifestations of spinal cord damage. Fortunately, these changes were transient in two patients, but they probably contributed to the death of the other patient. These clinical observations, therefore, which conform with experimental findings, strongly suggest that hypothermia is particularly useful in providing protection against spinal cord

Aneurysms of Aorta Treated by Resection

Type	Cases, No.	Deaths No.	Deaths %
Thoracic			
Sacciform	24	9	37
Fusiform	43	14	33
Dissecting	16	3	19
Subtotal	83	26	31
Abdominal			
Ruptured	27	9	33
Nonruptured	203	17	8
Subtotal	230	26	11
Total	313	52	17

damage following temporary occlusion during resection of more proximally situated aneurysms of the descending thoracic aorta.

For lesions located in the thoracic aorta below the level of the seventh thoracic vertebra, neither shunts nor hypothermia appear to be necessary, provided the procedure is performed expeditiously. Thus, among the seven patients in our series with lesions located in this area, the procedure was successfully performed in five, none of whom showed any evidence of neurological disturbances or ischemic damage to other organs after temporary arrest of aortic circulation for periods varying from 24 to 60 minutes. The two deaths in this group occurred from sudden hemorrhage, one on the eighth postoperative day resulting from a tear in the graft beginning at the time of anastomosis and the other from a leak at the suture line.

There were 14 deaths among the group of 43 patients with fusiform aneurysms. The major cause of death was heart failure, which accounted for six of the fatalities. Shock, hemorrhage, and infection each caused two deaths, and acute renal failure and cerebral anoxemic damage each were responsible for one death. All of the other patients who survived operation have remained well and free of symptoms. The first patient in this group, previously reported on,[2] has now been followed up for approximately three and one-half years since operation and remains fully recovered.

In a small proportion of cases, fusiform aneurysms arising in the descending thoracic aorta extend below the diaphragm and involve the upper segment of the abdominal aorta. Owing to the fact that the aneurysm in this region may involve the origin of major abdominal visceral branches, such as the celiac, superior mesenteric, and renal arteries, there is considerable danger of fatal ischemic damage to such vital structures as the liver, kidneys, and gastrointestinal tract being produced as a consequence of temporary arrest of blood flow to these organs during the period required to excise the aneurysm and replace it with an aortic homograft. Six of the patients in our series had such extensive thoracoabdominal aneurysms treated by resection and homograft replacement. The successful results obtained in four of these patients emphasize the importance of performing the procedure in such a manner as to minimize the period of ischemia to these vital structures. The procedure consisted in use of a temporary shunt to conduct blood around the occluded segment, with performance of the procedure in a manner to minimize the period of circulatory arrest.[3] By this means, it was possible to limit the occlusion of the renal arteries to a period varying from 15 to 46 minutes. Serial renal function studies in these cases revealed a characteristic pattern of depression of function during the first 4 or 5 days after operation, with progressive return to normal during the subsequent 10 days to two weeks. The period of occlusion of the celiac artery in these cases ranged from 44 to 116 minutes, and studies of hepatic function yielded no evidence of significant alterations after these periods of occlusion. The period of arrest of circulation through the superior mesenteric artery varied from 36 to 102 minutes, with no significant disturbances in gastrointestinal function.

This experience demonstrates the fact that, even in the most extensive types of thoracoabdominal aneurysm involving the celiac, superior mesenteric, and renal arteries, excision of the aneurysm and replacement with an aortic homograft, with restoration of continuity to these major visceral arteries, may be successfully accomplished. Thus, involvement of these vessels by an aneurysm need no longer be considered a contraindication to operation.

Dissecting Aneurysms.—Dissecting aneurysms of the aorta pose a somewhat different problem from that of sacciform or fusiform aneurysms in terms of the surgical approach, owing primarily to the pathological characteristics of these lesions. In order to provide a better understanding of the rationale of the surgical approach in these cases, a brief consideration of the pathological features of the disease is desirable. The dissection commonly begins a few centimeters above the aortic valve or in the descending thoracic aorta near the origin of the left subclavian artery. When this occurs, separation of the intramural layers of the aorta by the forceful stream of blood produces dissection, usually at the junction of the middle and outer thirds of the media, and progresses distally, involving all, or a portion of, the circumference of the aorta. As branches are encountered, they may be sheared off, or the dissecting process may extend along them for varying distances, thus diminishing or com-

pletely interrupting the blood supply to these areas. The extent and course of the dissection is extremely variable. It may be relatively limited, or it may involve the entire aorta and even extend down to the popliteal arteries. In the most severe form, dissection is rapid, and terminal perforation occurs through the adventitia into the pericardium, mediastinum, or peritoneal cavities, with death eventuating in a few hours or days. In the subacute type, the process takes place gradually over a period of days or weeks, terminating in rupture and death. In the chronic form, the dissected passage reenters the true lumen of the aorta to form a double-barreled aorta. Under these circumstances, the false passage may become covered with endothelium or occasionally be obliterated by thrombus formation with subsequent fibrous tissue organization. The prognosis in dissecting aneurysm of the aorta is extremely grave; the condition is rapidly fatal in from 75 to 90% of cases.[4]

Until recently, there was no satisfactory treatment for this condition. During the past few years, however, a method of surgical treatment has been devised that, on the basis of our experience with 16 cases, appears to provide an effective surgical approach to this disease. Since the problem is concerned essentially with prevention of further intramural dissection and terminal rupture, the operative procedure is directed toward correction of the process by actual removal and repair, or interruption of its progress by creation of conditions compatible with function and eventual repair. Although the essential principles underlying the operative procedure are the same for most cases, one of several surgical approaches may be applied, depending upon whether the lesion is localized or diffuse.[5] Thus, in cases in which the dissection begins in the ascending part of the aortic arch, the most logical procedure would seem to be creation of a reentry passage into the aortic lumen above with obliteration of the false passage below. This may be accomplished by cross-clamping the descending thoracic aorta, dividing it completely between clamps, obliterating the false passage below by approximating the outer and inner layers, excising a small segment from the intimal and medial layers above to produce reentry of the outer lumen, and then completing the procedure by end-to-end anastomosis. Blood flow is then directed from the double aortic lumen above into the single normal lumen below. This procedure was performed in four of the 16 cases.

In the cases in which the dissection begins near the origin of the left subclavian artery, a more curative type of procedure may be employed by combining the operative procedure just described with excision of the dissecting process, particularly in the upper portion. This may be done by excision of the segment involved in the origin of the dissection and replacement with an aortic homograft after the distal false passage has been obliterated. This type of procedure was performed in 12 of the 16 cases.

In the postoperative management it is important to control the hypertension, because this may be an important factor in preventing rupture of the weakened outer wall until it has been supported by a periaortic fibrous tissue reaction. Indeed, rupture was responsible for two of the three deaths that occurred in this series; this is believed to have been due to inability to control the excessive hypertension. The other death resulted from ventricular fibrillation occurring during hypothermia. All the other patients recovered, and follow-up observations extending up to two years show that they have remained asymptomatic and with two exceptions have resumed normal activity.

Aneurysms of the Abdominal Aorta

Aneurysms of the abdominal aorta present a much simpler problem in terms of surgical treatment than those of the thoracic aorta. At this low aortic level there is little or no danger of ischemic damage to vital structures from temporary arrest of the circulation for the period of time required to perform the procedure. Also, the lesion is characteristically well localized to the segment of the abdominal aorta immediately below the origin of the renal arteries and there is usually an adequate margin of relatively normal aorta at this level to permit anastomosis to the graft. Although in our earlier experience it was believed that extension of the aneurysm upward to involve the origin of the renal arteries constituted a contraindication to operation, subsequent experience

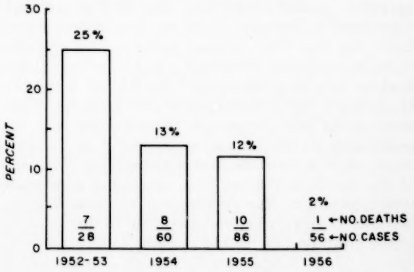

Fig. 1.—Decreasing mortality rates in cases of aneurysm of abdominal aorta.

has demonstrated that it is possible to excise such aneurysms successfully and to restore continuity to the renal arteries. Distal extension beyond the bifurcation has also proved not to be a limiting factor. Indeed, in the majority of our cases the bifurcation was involved, requiring resection. On the basis of this experience, therefore, it would appear that, so far as local process is concerned, few problems are encountered that indicate inoperability. For this reason, also, diagnostic lumbar aortography has become an unnecessary procedure in determining operability or in planning the surgical approach.

Selection of patients for operation in this series depended solely upon the diagnosis of aneurysm, and no patients were denied operation, even though many were aged and had serious cardiovascular, renal, or respiratory diseases that increased the risk of operation. Since most of the patients with aneurysms of the abdominal aorta are in the older age group, they are liable to the systemic degenerative changes of the aged, but age itself need not be considered a contraindication to operation, as evidenced by the successful results obtained in a patient 81 years of age. Nor is

hypertension a contraindication to operation, for approximately 60% of the patients had moderate to severe hypertension. The most important potential contraindications to operation are serious and disabling cerebral, cardiac, and renal disturbances. Under

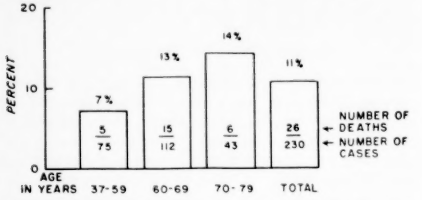

Fig. 2.—Mortality rates according to age of patient in cases of aneurysm of abdominal aorta.

these circumstances, the procedure may be inadvisable except for pressing reasons, such as immediate threat to the patient's life from rupture of the aneurysm.

Results of excisional therapy for aneurysms of the abdominal aorta have been increasingly gratifying. This is exemplified by the progressive decrease in operative mortality rate from over 25% in our early experience to less than 2% in our most recent experience (fig. 1). This striking reduction in operative mortality assumes additional significance on further analysis, revealing an equal if not higher proportion of poor-risk cases in the more recent series. These observations lend support to the conviction that improvements in the surgical management of these patients, as well as in the actual technical performance of the operation derived from increasing experience, should permit further reduction in the risk. The importance of certain factors in relation to the mortality rate is illustrated by further analysis of our experience. Among these factors, advancing age, hypertension, preexisting heart disease, and acute rupture of the aneurysm are particularly significant. The fatality rate, for example, in patients in the eighth decade of life was twice that of patients in the fourth and fifth decades (fig. 2). The importance of hypertension is

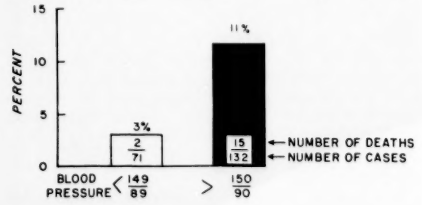

Fig. 3.—Mortality rates according to blood pressure in cases of aneurysm of abdominal aorta.

demonstrated by the fact that the risk in this group of patients was almost fourfold greater than that in the normotensive series (fig. 3). Similarly, the mortality rate in patients with preexisting heart disease was more than three times greater than that in patients without heart disease (fig. 4). Obviously, combination of these factors increases the risk further. This is well illustrated by analysis of the cases according to age of the patient and to presence of heart disease (fig. 5). Particularly striking is the low mortality rate of only 2% among the 92 patients under 65 years of age with no evidence of heart disease.

Still another factor, and perhaps one of the most important contributing to mortality, is acute rupture of the aneurysm. This is well demonstrated by the fact that more than a third of all the deaths occurred among patients with this complication. Moreover, the operative risk in this group of patients was more than four times greater than that in the group with nonperforated aneurysms (fig. 6). It must be realized, how-

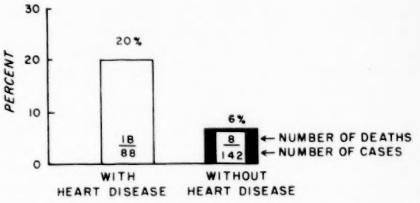

Fig. 4.—Mortality rates according to presence or absence of heart disease in cases of aneurysm of abdominal aorta.

ever, that the operations under these circumstances were emergency procedures performed on patients in shock with massive hemorrhage. Recovery of two-thirds of these patients after operation is particularly striking, since, prior to the application of this form of therapy, rupture of an aneurysm was almost invariably a fatal complication. Thus, in spite of the higher risk

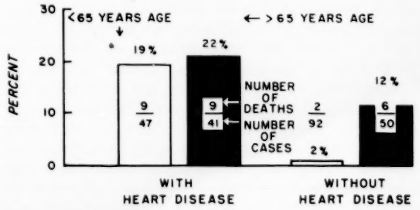

Fig. 5.—Mortality rates according to age of patient and presence or absence of heart disease in cases of aneurysm of abdominal aorta.

of operation under these circumstances, excision of the aneurysm should always be attempted regardless of the apparent hopelessness of the situation.

Although this experience is not sufficiently extensive, in terms of both numbers of cases and time elapsing since operation, to permit final evaluation of long-term results, results of follow-up studies extending over three and one-half years have been highly gratifying. With few exceptions there has been complete relief of symptoms and maintenance of good function. Some evidence of increase in life expectancy from this method of therapy may be obtained from a comparison of one-to-three-year survival rates in this series with those reported by Estes [6] and Wright and his associates [7] in their analysis of the natural course of the disease. Thus, according to

Estes, there was a steady decline in survival rate from 67% at the end of one year to 49% at the end of three years after the diagnosis was made. In Wright's analysis these respective figures were 60% and 16%. Of 138 patients in our series in whom operation was performed more than one year ago, 82% survived and have remained well during this period. The two-year survival rate in our series, based on 51 cases, is 72%, and the three-year survival rate, based on 16 cases, is 69% (fig. 7). It is thus apparent that there has been a significant increase in the survival rate following this method of therapy.

Summary and Conclusions

Aortic aneurysm is a progressively disabling, ultimately fatal disease, when untreated, with an average period of survival of one or two years after diagnosis. Until the past few years there was no satisfactory treatment for this condition. Recently a method of surgical correction has been devised in which the diseased portion is excised and normal function is restored by repair or by replacement with a homograft. This method has been employed with gratifying results in 313 cases in the five years since our first successful resection of an aortic aneurysm.

The application and results of treatment depend upon the nature and location of the aneurysm. Three types are encountered in the thoracic aorta: sacciform, fusiform, and dissecting. Sacciform aneurysms are readily extirpated by application of an occluding clamp tangentially across the neck of the aneurysm without encroachment upon the aortic lumen. The operative mortality rate among 24 patients thus treated was 37%. Fusiform aneurysms of the thoracic aorta require resection of the diseased segment of aorta, with restoration of continuity by means of an aortic homograft or a suitable plastic substitute. The surgical approach to dissecting aneurysms of the aorta is concerned with prevention of further intramural dissection and terminal rupture by creation of conditions compatible with function and eventual repair. For aneurysms arising in the ascending aorta, the procedure consists in the production of a reentry channel from the dissecting passage to the true lumen high in the descending thoracic aorta, with obliteration of the false passage below. The second method consists in the excision of the segment of aorta in which the dissection begins, with obliteration of the false passage below and replacement of the excised segment with an aortic homograft.

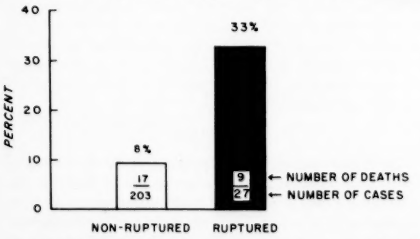

Fig. 6.—Mortality rates in cases of ruptured and nonruptured aneurysms of abdominal aorta.

Aneurysms of the abdominal aorta, except in the presence of rupture, present a much simpler surgical problem and are associated with less risk than those located elsewhere in the aorta. The most important potential contraindications to operation are disabling cerebral, cardiac, and renal disturbances. With increasing experience in the surgical management of these cases there has been a progressive decrease in the operative mortality from 25% in our early cases to less than 2% in the most recent cases. Long-term results have been most gratifying, and follow-up studies extending over three years reveal a significant increase in life expectancy.

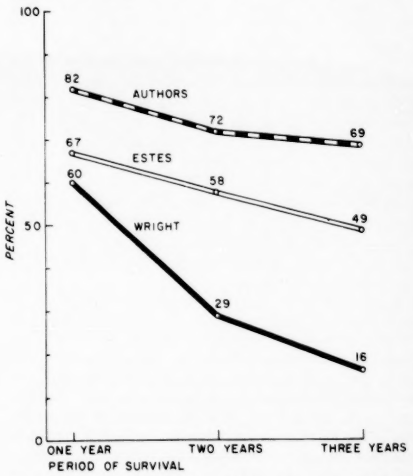

Fig. 7.—Life expectancy of patients with aneurysm of abdominal aorta as found in this study and by Estes [6] and Wright and others.[7]

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CORTICOSTEROID THERAPY IN CHRONIC ULCERATIVE COLITIS

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and
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• *The use of corticosteroids is only part of the treatment of ulcerative colitis. There is still no specific cure for this disease. The most striking benefit from steroid therapy in ulcerative colitis in this series was in the preparation for surgery of the acutely ill patient in a toxic condition. The risk in corticosteroid therapy lies in its masking effect on constitutional reaction, the obliteration of danger signs, and the direct toxic effect of the drugs.*

Patients with chronic ulcerative colitis have impaired adrenal function and diminished excretion of 17-ketosteroids, probably due to the debilitating effect of chronic infection.[1] Therefore, introduction of the corticosteroids stimulated hope that the administration of these drugs might affect the progress of the disease. Previous reports seem at variance regarding the efficacy of steroid therapy.[2] Some of the differences can be attributed to too short a period of observation, to too small a number of patients studied, and to failure to consider the extent and severity of the organic changes present in the colon at the time treatment was instituted. Spontaneous remissions, so characteristic of the course of chronic ulcerative colitis, further complicate the evaluation of results.

It was therefore decided to review the effect of corticosteroid therapy during the past five years in patients seen at the Brooklyn Veterans Administration Hospital, Maimonides Hospital, Kings County Hospital, and Long Island College Hospital. In addition, the results in 23 patients who were treated continuously with steroids for 10 to 23 months are also tabulated. The result was considered excellent if complete remission of sigmoidoscopic and symptomatic manifestations was obtained. A complete subsidence of symptoms but persistence of sigmoidoscopic abnormalities was considered a good effect. A fair result was obtained when symptoms were moderately improved. Therapy was considered to have failed when there was complete absence of any alleviation of the disease.

Corticotropin

Corticotropin (ACTH) was used in 28 patients (table 1), 12 women and 16 men, whose ages ranged from 24 to 64 years. The duration of the disease in these patients was from 8 months to 28 years. The drug was administered either intravenously in doses of 20 to 80 units in 1,000 cc. of a 5% solution of dextrose in water over an 8-to-12-hour period or intramuscularly as the suspension or repository injection (corticotropin gel) in doses of 75 to 100 units in 24 hours. Four patients were given injections of 40 mg. of corticotropin–zinc hydroxide subcutaneously after remission had been instituted by intravenous or intramuscular administration of corticotropin. The average duration of treatment was four weeks.

Improvement occurred in 22 of the 28 patients. Most failures occurred in the patients with the greatest organic changes in the colon. Very dramatic improvement was encountered in the patient in an acutely toxic condition, as manifested by prompt decline of fever, decrease in the number of bowel movements, and improvement in appetite and sense of well-being. Relapses occurred in four of seven patients with mild disease. In two this occurred within three months and in two within six months after corticotropin was withdrawn. Four are well, with their disease in remission: two after eight months and two after four years. Four of nine patients with moderately severe disease improved with corticotropin but had relapses within six months after this therapy was discontinued. Three of these promptly responded to corticotropin when it was given again. Four of six patients with severe disease had relapses within six months. Three of these failed to improve significantly with further steroid therapy. Four patients were treated with daily injections of corticotropin–zinc hydroxide. Remission has been maintained in three for six months. One had a relapse and, in spite of other steroid therapy, had to undergo colectomy.

Five patients had previously received cortisone, three hydrocortisone, two prednisone, and one prednisolone, with poor effect. They all improved when corticotropin was given. Conversely, only two patients who had failed to improve with corticotropin improved with other steroids (one with prednisone and one with hydrocortisone). One patient had severe intestinal hemorrhage after administration of prednisone and prednisolone, but he was able to tolerate corticotropin and improved.

Cortisone

Cortisone was used in 22 patients (table 2), 8 women and 14 men, whose ages ranged from 18 to 52 years. The duration of the disease in these patients was from 2 months to 14 years. The initial dose of cortisone was 300 mg. the first day and 200 mg. the second day, with a maintenance dose of 50 to 100 mg. thereafter. The minimal effective dose was maintained for one to four months.

The results with cortisone were not as good as those obtained with corticotropin. Fifteen patients of the 22 so treated improved, but complete remission was

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accomplished in only two. One-third of the patients failed to improve. Five patients subsequently treated with corticotropin improved. No patient who failed to improve with corticotropin improved with cortisone. The best results were obtained in the patients whose disease was mild or moderately severe. Three of seven with severe disease failed to improve at all, and two underwent colectomy. One woman with a moderately severe exacerbation during the fifth month of gestation

TABLE 1.—*Results of Treatment with Corticotropin in Twenty-eight Patients with Chronic Ulcerative Colitis*

Condition at Onset	Patients No.	Results					Response to Re-treatment	
		Excellent	Good	Fair	Poor	Relapse	Good	Failure
Mild	7	4	2	1	...	4	2	2
Moderately severe	11	2	4	3	2	4	3	1
Severe	10	2	2	2	4	4	1	3
Total	28	8	8	6	6	12	6	6

was given cortisone intermittently in doses of 25 mg. twice daily for two weeks and a rest the third week, with satisfactory response. She was brought to term on this regimen and was delivered of a normal infant. More than half the patients who improved had relapses within six months after treatment was stopped. More than half of these failed to respond to a subsequent course.

Hydrocortisone

Hydrocortisone was used in 36 patients (table 3), 16 women and 20 men, whose ages ranged from 18 to 64 years. The duration of the disease in these patients was from 9 months to 32 years. Rectal administration by enema or suppository in eight patients was ineffective. Hydrocortisone was used in doses of 100 mg. given intravenously in 10 severely ill patients. Hydrocortisone was also given orally in these patients. The oral dose of hydrocortisone ranged from 150 to 200 mg. daily for two days, and then a maintenance dose of 40 to 80 mg. was given daily for two to eight months.

Hydrocortisone appeared more effective than corti-

TABLE 2.—*Results of Treatment with Cortisone in Twenty-two Patients with Chronic Ulcerative Colitis*

Condition at Onset	Patients, No.	Results					Response to Re-treatment	
		Excellent	Good	Fair	Poor	Relapse	Good	Failure
Mild	7	1	4	1	1	3	2	1
Moderately severe	8	1	3	1	3	3	1	2
Severe	7	...	2	2	3	3	1	2
Total	22	2	9	4	7	9	4	5

sone. Twenty-five of 36 patients were favorably affected by orally or intravenously administered hydrocortisone. The results with intravenous administration of hydrocortisone in one seriously ill patient were spectacular, with prompt subsidence of fever and toxic condition. Five patients who failed to respond to hydrocortisone given orally improved with intravenous doses. Three patients responded to corticotropin after hydrocortisone failed to affect the disease. Relapses ensued within nine months in 13 of 25 patients. Eight of these relapses subsided promptly with retreatment, and remission has subsequently been maintained for from 4 to 16 months.

Prednisone

Prednisone was used in 18 patients (table 4), 11 women and 7 men, ranging in age from 24 to 55 years. The duration of their disease was from 10 months to 12 years. Prednisone was given in doses of 5 mg. every four hours for the first two days and then 5 mg. every six hours. The maintenance dose was frequently 5 mg. every eight hours. Eighteen patients were treated in this fashion. Therapy was maintained for 6 to 10 weeks.

The best results again occurred in the patients with the least organic change in the colon. Only two of seven severely ill patients showed any significant improvement. Of the 18 patients treated, remissions were encountered in 2 and improvement in 8. Prompt defervescence occurred in 9 patients. Thus, 8 of 18 patients did not have any significant amelioration of the disease from this dose of prednisone. Two of these responded to corticotropin and three to hydrocortisone. Relapses occurred in 4 of the 10 patients within four months after therapy was stopped. Two failed to improve on a second course of therapy with prednisone.

TABLE 3.—*Results of Treatment with Hydrocortisone in Thirty-six Patients with Chronic Ulcerative Colitis*

Condition at Onset	Patients, No.	Results					Response to Re-treatment	
		Excellent	Good	Fair	Poor	Relapse	Good	Failure
Mild	14	4	4	3	3	3	3	...
Moderately severe	10	2	4	1	3	5	2	3
Severe	12	1	3	3	5	5	3	2
Total	36	7	11	7	11	13	8	5

Prednisolone

Prednisolone was used in 10 patients (table 5), 5 women and 5 men, ranging in age from 22 to 38 years. The duration of the disease was from six months to five years. The drug was given in doses of 5 mg. every six hours for two days and then 2.5 mg. every six hours. The maintenance dose was 10 mg. daily for six to eight weeks. The results with prednisolone appear to be the poorest of those obtained with steroids. Only 50% of the patients showed any improvement. No complete remissions were obtained. Relapse occurred within three months in two patients and in five months in two other patients. Two of these four patients failed to respond to a subsequent course.

Continuous Therapy

In order to evaluate the effects of long-term steroid therapy, the results in 23 ambulatory patients treated with maintenance doses of steroids continuously for at least 10 months are presented (table 6). There were 15 women and 8 men, ranging in age from 16 to 51 years, in whom the duration of the disease was from two months to three years. Ten had moderately severe disease, and four had severe organic change. Excellent remission has been maintained in four patients. The longest remission, lasting 23 months, has occurred with hydrocortisone. One patient, who received corti-

sone intermittently for 16 months, was maintained through a normal pregnancy without ill-effect on the infant.

Five patients had relapses while on steroid therapy. Two patients receiving cortisone relapsed in the 7th and 11th months of treatment respectively. The latter failed to improve with other steroids and had a colectomy, while the other patient responded to intravenously given hydrocortisone and has been receiving

TABLE 4.—*Results of Treatment with Prednisone in Eighteen Patients with Chronic Ulcerative Colitis*

Condition at Onset	Patients, No.	Results					Response to Re-treatment	
		Excellent	Good	Fair	Poor	Relapse	Good	Failure
Mild	5	1	2	2	...	2	1	1
Moderately severe	6	1	1	1	3	2	1	1
Severe	7	...	1	1	5	...	...	...
Total	18	2	4	4	8	4	2	2

self-administered corticotropin–zinc hydroxide for three months, with remission. Two patients who were receiving hydrocortisone also had relapses in the 3rd and 14th months of treatment respectively. Both, however, responded to increased doses of hydrocortisone. One patient had a relapse in the 10th month of treatment with prednisone. Treatment with corticotropin–zinc hydroxide induced a response in this patient, and a good remission has been maintained for four months.

Complications

Table 7 lists the complications that occurred during steroid therapy. Most complications occurred with cortisone. Three patients developed perforation of the colon while receiving cortisone and one each while receiving corticotropin and hydrocortisone. The danger of perforation appears to be related to the duration of treatment, since none occurred when there had been fewer than three weeks of therapy. Prednisone seemed to predispose to hemorrhage. Three patients had massive gastrointestinal bleeding, one from a preexisting duodenal ulcer and two from the colon. Hemorrhage from the colon occurred in one patient

TABLE 5.—*Results of Treatment with Prednisolone in Ten Patients with Chronic Ulcerative Colitis*

Condition at Onset	Patients, No.	Results					Response to Re-treatment	
		Excellent	Good	Fair	Poor	Relapse	Good	Failure
Mild	4	...	2	1	1	2	1	1
Moderately severe	4	...	1	1	2	2	1	1
Severe	2	...	...	...	2	...	...	...
Total	10	0	3	2	5	4	2	2

receiving corticotropin and one receiving cortisone. One patient was placed on prednisone therapy and bled from the colon. He was then given corticotropin and seemed to improve. Then he was treated with prednisolone and had a hemorrhage again. Treatment once again with corticotropin resulted in an excellent recovery.

Metastatic infection is an important complication of steroid therapy. One patient developed miliary tuberculosis while on corticotropin therapy. Two patients receiving cortisone and one receiving corticotropin developed micrococcic (staphylococcic) septicemia. One of these patients died of an acute micrococcic bacterial endocarditis. Six patients developed severe perianal infections. In two, colectomy had to be performed because of the severity of this complication.

Electrolyte changes of troublesome degree were encountered only twice. In one patient, who had colectomy after six weeks of cortisone therapy, the postoperative course was particularly trying because of very low potassium levels and cardiac irregularities. Mental changes in one patient receiving hydrocortisone and in two receiving cortisone necessitated discontinuance of therapy. One of these patients committed suicide. Fluid retention occurred in only a few patients, including one receiving prednisone. Activation of an ulcer was seen in one patient each in the groups receiving corticotropin, cortisone, and prednisone.

Comment

The results obtained here affirm the fact that, although the steroids are helpful in the management of ulcerative colitis, they do not provide a cure. Time has demonstrated both the beneficial effects of steroids and the dangers inherent in their use.

TABLE 6.—*Results of Continuous Treatment with Steroids for at Least Ten Months in Twenty-three Patients with Chronic Ulcerative Colitis*

	Patients, No.	Result				Response to Further Treatment†	
		Excellent	Good	Fair	Relapse*	Good	Failure
Cortisone	8	2	2	2	2(7, 11)	...	2
Hydrocortisone	11	2	3	4	2(11, 2)	2	...
Prednisone	4	...	1	2	1(10)	...	1
Total	23	4	6	8	5	2	3

* Figures in parentheses represent number of months of steroid therapy after which relapse occurred.

† Represents only response to further treatment with same steroid (see text).

The desirable effect was the prompt subsidence of constitutional reactions. There was frequently a rapid defervescence, usually within 12 hours. Erythema nodosum, iritis, conjunctivitis, and arthritis were promptly alleviated. The patient became euphoric, and the appetite improved. The number of bowel movements decreased. The sigmoidoscopic appearance of the colon seemed to improve even in those patients with persistent symptoms. The colon was paler and less friable. It was noted that the pseudopolyps appeared to be mulberry-colored and attached loosely. Ulcerations were more discrete. Giant ulcers were noted in two instances.[3] As the sigmoidoscope advanced, pseudopolyps were frequently shorn off on contact (intact). Shreds of tissue were often passed in the stool. These changes may be due to decreased fibroblastic proliferation. However, no significant change in the radiographic appearance of the colon was observed.

The most striking benefit from steroid therapy in ulcerative colitis was in the preparation for surgery of the acutely ill patient in a toxic condition. Thus, a patient who was a poor operative risk could be restored to a good status by several days of intensive steroid therapy. Intravenously given corticotropin or

hydrocortisone were the best agents for this. Several patients who seemed destined for colectomy were tided over the critical phase, had a remission, and could be continued on medical treatment.

Patients undergoing elective colectomy who have previously received steroids should receive hydrocortisone intravenously for several days before, during, and after surgery. The patient should be weaned from the hydrocortisone and transferred to corticotropin therapy gradually, until maintenance is solely with corticotropin. The dose of corticotropin should then be decreased slowly. We have encountered two instances of cardiac arrest and three of postoperative collapse in patients to whom cortisone had been administered two to five months prior to surgery. In view of the extensive surgery involved in colectomy, one might consider it wise to use steroids in all patients debilitated by severe chronic ulcerative colitis.

The risk in corticosteroid therapy lies in its masking effect on constitutional reaction, the obliteration of danger signs, and the direct toxic effects of the drugs. The production of mental change, alterations in electrolytes, and the retention of fluid can be controlled by withdrawing the drug. Particularly dangerous, however, is the suppression of certain protective processes, which may lead to systemic dissemination of infection. An effective broad-spectrum antibiotic should be used in conjunction with steroids. Peritonitis may be masked. Constant vigilance is essential to detect impending perforation. A rising pulse rate, deterioration in the patient's appearance, increased localizing signs, and increasing colonic distention are warning signs.

Has steroid therapy affected the course of chronic ulcerative colitis? Truelove and Witts[2e] conducted a double-blind study, using cortisone and a placebo.

TABLE 7.—*Complications Occurring During Treatment of Patients with Chronic Ulcerative Colitis with Steroids*

	Corticotropin (28)*	Cortisone (22)	Hydrocortisone (36)	Prednisone (18)	Prednisolone (10)
Perforation	1	3	1	...	...
Metastatic infection	1	2	1	...	...
Hemorrhage†	1	1	...	3	1
Activation of ulcer epigastric distress	1	...	1	1	...
Mental depression	1	2‡	...	...	...
Electrolyte changes (hypokalemia)	...	1	1	...	...
Fluid retention	2	1	1	1	...
Perianal infection	1	2	2	1	...
Total	8	12	7	6	1

* Figures in parentheses indicate total number of patients in treatment group.

† Four hemmorhages were from the colon, one (with prednisone) from an ulcer.

‡ One of these patients committed suicide.

They found that the improvement in the over-all clinical picture and in the sigmoidoscopic and x-ray appearance of the colon and the lowered mortality were in favor of cortisone. Two of us (S. M. F. and A. W.), with Fisher,[4] have treated 104 patients with chronic ulcerative colitis with different antibiotics. The results in this series of patients can be compared with those obtained with steroids (table 8). No significant difference can be detected in the results of these two series. The steroids do not, of themselves, produce remission, although they do produce a more rapid amelioration of symptoms.

The results of continuous treatment of 19 patients with chlortetracycline (Aureomycin) for 19 to 56 months were compared with those of continuous treatment with the steroids in 23 patients. Neither of the two forms of treatment has any significant advantage. The patients treated with steroids had relapses as frequently as did those receiving chlortetracycline. Four excellent remissions were maintained with steroids and none with chlortetracycline, but otherwise distribution of the results was similar, with good results in eight patients treated with chlortetracycline and six treated with steroids, fair results in six patients treated with chlortetracycline and eight treated with steroids, and poor results in five patients in each group. It would seem, therefore, that the course of chronic ulcerative colitis is not significantly affected by steroid therapy. It is possible that the rapidity of the progress of the disease with fibrosis of the colon may be inhibited. Corticotropin appears to be superior to the other steroids, perhaps because of the parenteral mode of its administration.

TABLE 8.—*Comparison of Results with Antibiotic and Steroid Therapy*

	Patients, No.	Results: Excellent	Good	Fair	Poor
Phthalylsulfacetamide tablets (Sulfathalidine)	22	2	7	5	8
Salicylazosulfapyridine	19	7	3	3	6
Chlortetracycline (Aureomycin)	41	10	10	12	9
Oxytetracycline (Terramycin)	22	3	6	5	8
Total	104(114)*	22(19)	26(35)	25(23)	31(37)

* Figures in parentheses represent combined results with all forms of short-term steroid therapy. Breakdown of these figures can be seen in tables 1 through 6.

The results reported in this paper are not new, but they bear emphasis. Each new drug introduced for the treatment of ulcerative colitis has been hailed as a panacea until it in turn has been replaced by one newer. Older methods have sometimes been forgotten in the enthusiasm for the new. The standard treatment, including diet, supportive therapy, the control of possible hypersensitivity factors, and psychotherapy, should continue to be used. The use of corticosteroids is only part of the treatment of ulcerative colitis. There is still no specific cure for this disease. The successes reported with any single agent should not be confused with the remissions so characteristic of the natural history of ulcerative colitis. The search for a therapeutic agent that will arrest the progress of this disease must still continue.

Summary

Corticosteroids were used in the treatment of chronic ulcerative colitis. One hundred fourteen patients received short-term treatment and 23 were treated continuously for 10 to 23 months. Corticotropin (ACTH), cortisone, hydrocortisone, prednisone, and prednisolone were administered, and of these corticotropin appeared to exert the most beneficial effects and produce the least adverse effects. The

corticosteroids suppress the constitutional manifestations but do not alter the natural history of the disease. A balance between the expected favorable effects of suppression of severe constitutional reaction and the potential danger of complications should be established. Corticosteroid therapy is of great help in gaining time to prepare the patient for surgery or by inducing euphoria and appetite. While regression of symptoms occurs more promptly with steroids than with other therapeutic measures, there seems to be no evidence that an increased number of remissions will result from their use.

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ANEURYSMS ON THE ANTERIOR CEREBRAL ARTERY

EVALUATION OF SURGICAL AND "CONSERVATIVE" TREATMENTS

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• *The use of cerebral angiography is imperative in any case of intracranial bleeding in which definitive treatment is contemplated. Without angiography, the surgical treatment of aneurysms would be limited to those localizing themselves by calcification or localizing neurological signs. Aneurysms of the anterior cerebral system constitute 20 to 25% of all the aneurysms. Clipping of one anterior cerebral artery may in most cases be effective treatment, but in some instances it may be the only possible intracranial procedure. Whenever possible the aneurysms should be excluded from the circulation.*

Intracranial aneurysms are among the common causes of serious cerebral disorder and are certainly the most common cause of spontaneous subarachnoid hemorrhage. Falconer [1] in 1950 estimated that 3 of every 40,000 people will suffer a spontaneous subarachnoid hemorrhage each year, while Richardson and Hyland [2] found that from 0.5 to 1.5% of all autopsies reveal the presence of an intracranial aneurysm. Furthermore, rupture of an intracranial aneurysm and spontaneous subarachnoid hemorrhage carry with them a very high mortality and morbidity. From 25 to 50% of all patients suffering a ruptured intracranial aneurysm that is treated "conservatively," with bed rest and without surgical intervention, die as a result of the first hemorrhage. Many of those who survive have a second hemorrhage within a few weeks or months after the first hemorrhage, and 50% of these also die if they do not have the benefit of surgical therapy. It is obvious that ruptured intracranial aneurysms constitute a serious condition, which demands treatment if satisfactory treatment is possible. Admittedly the results of surgical intervention in the past have often been discouraging.[3] It is obvious, however, that improvement of the appalling mortality rate associated with conservative treatment can only come from serious study of the problem and determined efforts to treat these dangerous lesions.

Within recent years our knowledge of intracranial aneurysms—their behavior, their manifestations, and, most of all, their proper treatment—has greatly increased. The situation is still far from perfect. In far too many instances the possibility that the patient may be suffering from a ruptured aneurysm is not considered. In far too many cases reliance is still placed on conservative treatment, which carries with it such a formidable rate of morbidity and mortality.

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On the other hand, the optimum form of surgical treatment is still to be determined for many types of intracranial aneurysm.

In the past many articles have dealt with intracranial aneurysms as a group. This is no longer satisfactory or adequate. It must be obvious that the treatment of aneurysms in one part of the cerebral circulation may be very different from that of those in other parts. At this time, for example, it seems that the best results with aneurysms of the intracranial portion of the internal carotid artery, either at the bifurcation into the anterior and middle cerebral arteries or below it, is ligation of the common carotid artery.[4] Such treatment, however, seems much less appropriate for aneurysms of the anterior cerebral arteries or the middle cerebral arteries, and it is not at all suitable for aneurysms of the vertebral arteries, the basilar artery, the posterior cerebral arteries, or their branches. The time has come when we must deal separately with each type of intracranial aneurysm and develop the optimum type of treatment for aneurysms in each location.

Often surgeons are content merely to present operative and postoperative mortality statistics. Obviously such information is inadequate to permit anyone to evaluate the various forms of treatment. We must have statistics on rates of morbidity as well as mortality, and we must have the figures for the entire group, both those patients who are operated on and those who are not. Our concern must be to develop the optimum treatment for all patients. If one elects to wait two or more weeks after an aneurysm ruptures before undertaking surgical therapy, it is obvious that his figures for mortality of patients who were operated on will be much more favorable than if he elects to operate much earlier, before most of the more critically ill patients have died. But the fact that his operative mortality is low does not indicate that the mortality rate for his entire group of patients is any better than the rate for the patients of the surgeon who undertook to operate earlier or than the mortality rate for patients of physicians who treated their patients conservatively. The optimum course can be determined only when all the facts are available. Furthermore, it is not sufficient to know merely that the patient is alive. We must also know whether he is paralyzed, whether he is intellectually well, and whether he is able to carry on at his former or some similar occupation in which he can support himself and his family.

Material of Study

Generally aneurysms on the anterior cerebral system constitute 20 to 25% of all aneurysms.[5] In this paper we have reviewed the records of all the patients with such aneurysms who have come under our care from 1945 to 1955, regardless of whether they were operated on. Our series consists of 18 male and 4 female patients; however, the general incidence of intracranial aneurysms is conceded to be slightly greater in women than in men. In 1,568 cases from various series reviewed in which the sex was known, 855 were women and 713 were men.[6] The age range for all patients with intracranial aneurysms is from 1½ years to senescense.[6a] The incidence in general has been said to be fairly steady from the age of 20 on; however, there tends to be a peak of incidence in the fifth and sixth decades of life. The ages of our patients ranged from 33 to 56 years, with an average age of 46.1 years. Of the 22 patients studied, 18 were in the 41-to-56-year-old range (fig. 1).

Signs and Symptoms as Aids to Prognosis

Some correlation has been attempted between the signs and symptoms found in these patients and the final results in hopes that we may have some indicator of ultimate prognosis (see table). All of these aneurysms had bled one or more times, and all patients without exception had a history of some headache, although in six of them this was a relatively minor complaint. Twelve patients had loss of consciousness prior to admission either recently or previously. Six of these died during hospitalization. Three more patients lost consciousness and died after admission. Superficially it would appear that the patient who lost consciousness and recovered before admission had a better chance of recovery than one who was unconscious on admission or became comatose shortly after admission. This is weighted, however, for it does not take into account the number of patients who lose consciousness and die before admission or who are dead on arrival. Brief loss of consciousness is of little significance, while persistent coma is a grave prognostic sign.

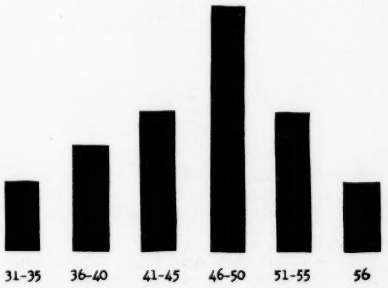

Fig. 1.—Graph showing age distribution of 22 patients with intracranial aneurysm.

Two patients had generalized convulsions prior to admission; one of them died. One other patient had a terminal seizure on the day of admission. Two others had focal twitching and did well subsequently. Seizure activity per se, therefore, does not appear to be of prognostic significance unless associated with progressive and profound loss of consciousness.

The two neurological findings particularly significant in evaluating prognosis appear to be severe hemiparesis and papilledema. Three patients with severe hemiparesis or hemiplegia all died. These three all had massive intracerebral hemorrhage, as did one other patient who died. Four patients, three of whom died, were seen with bilateral retinal hemorrhages. Six other patients had optic disks that were described as hazy, boggy, or blurred. Four of these patients died. Papilledema, generally, in this series is seen to be a poor prognostic sign.

Data on Twenty-two Patients with Aneurysm on Anterior Cerebral System

Age, Sex, and Date of Admission	Episodes and Time of Occurrence Before Ligation or Death	Signs and Symptoms on Admission	Angiogram—Exposure, Anesthetic, and Results	Treatment	Result
51, M 2/18/53	Headache, coma 8 days; semicoma since	Bilateral papilledema with hemorrhages; deep tendon reflexes increased on left; forced grasp on left; L.P.: 500 mm. H_2O, bloody	Bilateral open, general; right anterior cerebral, 4 by 3 mm. 1½ cm. from origin of anterior cerebral artery	Trapped with two clips	Working full time
47, M 3/9/53	Severe frontal pain, 8 yr. and 5 yr.; frontal pain, 11 days; twitching left thumb and big toe	Negative neurological examination; L.P.: 400 mm. H_2O, bloody	Bilateral done elsewhere; anterior communicating artery, 5 by 10 mm.	Trapped with two clips; right anterior cerebral artery clipped	Working 12-14 hr./day
39, F 5/8/53	Severe headache, 2 yr., 3 mo., 8 days	Old Bell's palsy; Babinski's sign on left; increased left knee jerk; no L.P.	Right percutaneous; general; 8 by 10 mm.; callosomarginal, 12 mm. from origin	Trapped and anterior cerebral artery clipped	Tonic seizure 5 days postoperatively; working full time
53, M 3/29/53	Severe headache, 20 days, 17 days, 9 days	Disk margins blurred; bilateral Hoffmann's sign; L.P.: 310 mm. H_2O, bloody	Right percutaneous, local (unsatisfactory); bilateral percutaneous, general; right anterior cerebral	Right anterior cerebral, one clip at origin	Returned to work; died suddenly 2 mo. postoperatively; no autopsy
50, M 1/28/52	Headache, 3 wk.	First admission: increased right knee jerk; L.P.: 310 mm. H_2O, bloody	Left percutaneous, general; aneurysm proximal portion midcerebral	Ligation of left common carotid artery	Did well
12/12/55	Headache, 18 days; hemiparesis on right, 2-3 hr.	Second admission: ¾ Babinski's sign on right; L.P.: 310 mm. H_2O, bloody	Right percutaneous, left percutaneous; aneurysms right and left midcerebral and communicating artery (visualized from right and left internal carotid in neck)	Absolute bed rest	Died 15 days after admission; repeat hemorrhage anterior communicating artery
49, M 3/5/52	Coma, 7 yr.; hemiplegia on right, 5 yr.; coma, convulsion, 3 wk.	Negative neurological examination 1 wk. after last episode	Left percutaneous, general; pea-sized aneurysm on anterior communicating artery; right percutaneous, general; negative	One clip on left anterior cerebral artery; packing around aneurysm with absorbable gelatin sponge	Did well; returned with pyelonephritis and bacteremia; discharged; present condition unknown
56, M 4/5/51	Headache, 2½ mo.; coma, 25 days; visual hallucinations since	Ptosis and mydriasis on right; hazy left temporal disk; bilateral Babinski's sign; L.P.: 220 mm. H_2O, xanthochromic	Bilateral open, general; aneurysm left anterior cerebral or anterior communicating artery near bifurcation	Left anterior cerebral artery clipped 3 mm. from origin	Retired; doing well; no difficulty
43, M 12/11/50	Lost consciousness, 2½-3 yr.; coma for 5 days, 4 mo. ago	Increased knee and ankle jerk on right; L.P.: 150 mm. H_2O	Left percutaneous, general; aneurysm, 5-7 mm., left anterior cerebral artery	Left anterior cerebral artery clipped at origin	Slight memory difficulty and acalculia; present condition unknown
42, M 11/7/50	Headache, nausea, vomiting, 3 wk.; twitching right thigh and shoulder	? increased reflexes, left leg; L.P.: 160 mm. H_2O, bloody	Right percutaneous, general; left open, general; aneurysm left anterior cerebral artery	Left anterior cerebral artery clipped	Works full time as truck driver
37, M 10/16/49	Headache and unconsciousness, 5 mo.; headache since; weakness left side, 10 days	Increased right triceps reflex; decreased right abdominal; Hoffmann's sign on right; L.P.: bloody	Right carotid artery; aneurysm right anterior cerebral artery, first portion	Refused surgery	Works full time
33, M 12/10/51	Headache, scotoma incoordination, 31 days; short coma, 10 days	No localization; L.P.: 320 mm. H_2O, xanthochromic	Right carotid artery percutaneous, aneurysm on right anterior cerebral artery; 12 days postoperatively left carotid, open, bilateral filling, no aneurysm	Right anterior cerebral artery clipped twice; packing with absorbable gelatin sponge	Works full time
49, M 2/5/52	Headache, 1½ yr. and 12 days	Hemiparesis on right; increased right reflexes; Hoffmann's sign on right, marked aphasia; L.P.: 200 mm. H_2O, bloody	Left carotid artery; left anterior cerebral artery aneurysm	Left anterior cerebral artery clipped; lateral to optic tract	Marked hemiplegia and aphasia; walks with cane and speaks with difficulty
40, M 4/11/56	Headache, 4 wk.; difficulty with left arm 2½ wk.	Dysarthria, aphasia, weakness left arm and face; increased reflexes on left; Hoffmann's and Babinski's signs on left; L.P.: 120 mm. H_2O, xanthochromic	None	Conservative; 4/24 repeat hemorrhages; seizures; bilateral papilledema with hemorrhages; right decompression evacuation hematoma	Died day after surgery
44, F 12/8/53	Loss of consciousness, morning of admission	Bilateral hemorrhages in fundi; right pupil bigger than left and pupils fixed; left facial weakness; bilateral Babinski's and Hoffmann's signs; L.P.: 420 mm. H_2O, bloody	Right percutaneous, local; small anterior cerebral artery aneurysm	Critical on admission	Died early on morning after angiogram
35, M 3/2/46	Headache, 5 days; coma, 3 days	Conjugate deviation to right; disks boggy; flaccid on left; L.P.: 580 mm. H_2O, xanthochromic	None; critical on admission	Right subtemporal decompression day of admission	Died 2 days after surgery; aneurysm anterior communicating artery; hemorrhage right hemisphere
42, M 1/24/57	Headache, 36 and 28 days; coma, few minutes	Hemiparesis on left; Babinski's sign on left, increased reflexes left; L.P.: 350 mm. H_2O, bloody	None	Hemiplegia on left in hospital; decompression and evacuation hematoma; aneurysm right frontal lobe clipped	Died 2 days after surgery

Data on Twenty-two Patients with Aneurysm on Anterior Cerebral System (continued)

Age, Sex, and Date of Admission	Episodes and Time of Occurrence Before Ligation or Death	Signs and Symptoms on Admission	Angiogram—Exposure, Anesthetic, and Results	Treatment	Result
53, M 9/15/48	Headache, 2 wk.	Bilateral hemorrhages in fundi; pupils miotic and irregular; ? weakness right arm; confused and drowsy; L.P.: 480 mm. H_2O, bloody	None	Coma after admission; unilateral seizure	Died day of admission; aneurysm of the anterior cerebral artery
56, M 7/23/48	Coma and headache 26 days; coma 2 days; admitted in coma	Blurred disks; pupils pinpoint; bilateral Babinski's sign; L.P.: 440 mm. H_2O, bloody	None	Conservative for 3 wk. prior to admission	Died day of admission of repeated hemorrhage; aneurysm branch of anterior cerebral artery, left medial surface
51, M 6/29/48	Headache and seizure day of admission	Disks blurred; marked arteriosclerosis; L.P.: 210 mm. H_2O, xanthochromic	None	Conservative; repeat headache, coma, unilateral seizure	Died 7/7/48 with repeated hemorrhage; aneurysm, branch of anterior cerebral artery, left medial surface
50, F 6/23/47	Headache day of admission with seizure	Lethargy; diplopia; bilateral hemorrhages in fundi; abducens weakness, right; ? weakness right leg; L.P.: 430 mm. H_2O, bloody	None	Conservative; 3 hemorrhages in hospital	Died 7/9/47; aneurysm anterior communicating artery
50, M 6/8/55	Headache, 11 and 8 days	Slight right facial weakness; L.P.: 70 mm. H_2O, bloody	Bilateral percutaneous, local; aneurysms right anterior cerebral, anterior communicating 2 infraclinoid right internal carotid arteries	Seizure during angiogram; head turned left; right side tonic; bilateral Babinski's signs and increased reflexes; left facial weakness; stellate block, normal 1 hr. later; conservative	Died 6/15/55
48, F 9/12/55	Migraine headaches since childhood; severe episode 3 yr.; headache 17 days	Hypertension, 200/95 mm. Hg; negative neurological examination; L.P.: 300 mm. H_2O, bloody; developed positive Babinski's signs and lethargy	Right percutaneous, local; right anterior and communicating arteries failed to fill; left percutaneous, local; aneurysm left anterior cerebral or anterior communicating artery	Left anterior cerebral artery clipped proximal and distal	Slight weakness right leg for short period

* L.P., lumbar puncture.
† ?, doubtful.

In 15 patients with slight to marked lateralizing signs, the aneurysm was on the side indicated by the signs in 11. In three the aneurysm was on the same side as the deficit, and in one the aneurysm arose from the center of the anterior communicating artery. It is well known and not uncommon that aneurysms on the anterior cerebral or anterior communicating arteries may bleed into the opposite cerebral hemisphere, thus giving false lateralization, so far as the position of the aneurysm is concerned.

There may be some correlation between the findings on lumbar puncture and the outcome of each case. In 20 patients in whom the spinal fluid pressure was recorded, the range was from 70 to over 600 mm. H_2O. The average spinal fluid pressure was 304 mm. H_2O. Of the 11 patients who died, only 3 had a spinal fluid pressure of less than 330 mm. H_2O, while of the 9 who lived only 2 had a spinal fluid pressure of over this level. The total protein in the spinal fluid measured from 26 to 1,640 mg. per 100 cc. and did not seem of prognostic value. Neither did it seem to be a measure of brain damage, as severe brain damage and ultimate death occurred in the patient with the spinal fluid protein level of 26 mg. per 100 cc.

The signs and symptoms that most suggest a fatal outcome therefore appear to be prolonged unconsciousness, papilledema, and severe hemiparesis. Although we know that it is not necessarily so, the presence of a frontal intracerebral hematoma was invariably fatal in this series. Intracerebral bleeding is bound to cause considerable and often irreparable cerebral damage, and it is probably always associated with cerebral edema, which may be very serious.

Angiography

Without angiography, the surgical treatment of aneurysms would be limited to those localizing themselves by calcification or localizing neurological signs. Dandy [6a] and others deprecated angiography as hazardous and unnecessary in most instances. In more recent years, however, angiographic technique and mediums have improved so that, while there is still risk, the information to be gained makes the risk worth taking. If it were not for angiographic localization, the majority of patients with subarachnoid hemorrhage would still be treated by bed rest and hope, as were some of the earlier patients in this series.

In our series, 20 angiograms were made on 15 patients; 13 of these were unilateral, and 7 were bilateral. Five angiograms were made by open exposure of the common carotid artery, 14 were percutaneous, and one was done elsewhere. General anesthesia, with use of thiopental (Pentothal) sodium, was given in 13 cases; in 6 local anesthesia with use of 1% procaine hydrochloride was used. It is now our practice to do angiography percutaneously with the patient under local anesthesia except for specific contraindications. The average amount of dye used was 29.8 cc. on each side. This has subsequently been reduced in most cases to 16 to 20 cc. In one patient sodium acetrizoate (Urokon sodium) was used, but in all others the dye

employed was 35% iodopyracet (Diodrast) concentrated. Recently we have been using diatrizoate (Hypaque) sodium, which we now prefer to the other mediums.

The average duration from the time of the last hemorrhage to the first angiogram, excluding two patients who were first seen four and five months after their subarachnoid hemorrhages, was 9.8 days. Of 15 patients who had angiography, only 3 died without surgery. One died the day after the angiogram and two days after admission; the other two had multiple intracrannial aneurysms and died while on "conservative" management. The only angiographic complication in this series was in one of the patients with multiple aneurysms. During the procedure he had a unilateral adversive seizure (a convulsive seizure in which the patient's eyes, head, neck, and trunk turn toward the side opposite the cerebral lesion). He did not respond to painful stimuli. Reflexes were increased throughout and Babinski's signs were present bilaterally. Procaine (Novocain) hydrochloride was injected into the stellate ganglion, and the patient recovered completely within an hour. Seven patients had no angiography,

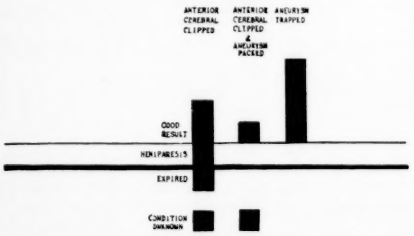

Fig. 2.—Graph showing results of various forms of direct surgical treatment of aneurysms of the anterior cerebral system.

and they all died. One of these died the day of admission. Two died two days after subtemporal decompressions, which were carried out as emergency measures on desperately ill patients. One died two days after definitive attack on the aneurysm, which was found while evacuating an intracerebral hematoma. Five of these seven were seen some time before death and may well have been saved had angiography and early surgical treatment been in use routinely at that time.

Surgical Treatment

Eleven patients were operated on in whom the aneurysm was attacked directly after having been visualized by angiography. One died approximately two months postoperatively of a recurrent intracranial hemorrhage. This patient had a single clip on one anterior cerebral artery near its origin. One had residual hemiplegia and aphasia. One did well until an acute attack of pyelonephritis and bacteremia 19 months later. He has not been heard from recently. A fourth patient did well for some time but has likewise not been heard from recently. Seven have done well, have had no particular symptoms, and are all working full time with the exception of one who has retired. These all had frontal craniotomies; five were on the left side and six on the right. Six of these 11 were operated on under hypotensive anesthesia. In the first of these hexamethonium bromide was used but in all subsequent patients trimethaphan (Arfonad) camphorsulfonate was used. The use of controlled arterial hypotension during the operation has proved to be of considerable help in neurological surgery, particularly in cases of intracranial aneurysm, vascular malformation, and extremely vascular tumors.

In all cases the treatment of the aneurysm per se has been clipping of the parent vessel. Two of these aneurysms were packed with absorbable gelatin sponge (Gelfoam) in addition. The number of clips necessary depended, of course, on the position of the aneurysm. If the aneurysm arose from the anterior communicating artery at its junction with one anterior cerebral artery, the anterior cerebral artery on this side and the distal end of the anterior communicating were both clipped, thus completely isolating the aneurysm. In five cases the left anterior cerebral artery was clipped. Four of the patients in whom this was done recovered completely, while a fifth has a persistent hemiplegia and aphasia. However, as this patient had hemiparesis on the right side and severe aphasia prior to the operation, it is obvious that this disabling persistent defect cannot be attributed entirely to occluding the left anterior cerebral artery. The patient who died of subsequent intracranial hemorrhage two months postoperatively had had one clip applied on the anterior cerebral artery near its origin from the internal carotid artery. Presumably either this clip loosened or the aneurysm filled and ruptured from flow that came across the anterior communicating artery. It is possible also that in this case another aneurysm may have been present, since multiple aneurysms are not uncommon, as we have seen, and no postmortem examination was obtained.

The type of intracranial treatment varied somewhat (fig. 2). Five patients had simple clipping of the parent vessel. In these cases the aneurysm was either on one anterior cerebral artery or, if on the anterior communicating artery, it was filled from only one side. The anterior cerebral artery demonstrated by angiography to be the parent vessel was the one occluded by clipping. One of these patients died two months postoperatively of another intracranial hemorrhage as noted above. A second patient, also noted above, has a persistent hemiparesis but is able to walk and speak some. Three other patients returned to normal activity, but the condition of one is not known at present. Two patients had simple clipping plus packing of the aneurysm with absorbable gelatin sponge. Both returned to normal activity but one had subsequent pyelonephritis and bacteremia. His condition is not known at present. Four patients were treated by trapping the aneurysm between two or more clips. All of them are back at full activity.

Among the patients on whom no operations were done, one was seen five months after he suffered a subarachnoid hemorrhage and refused surgery. He is alive and well at present. Two patients died within 36 hours of admission and shortly after their initial hemor-

rhages. The remaining four patients died of recurrent hemorrhages while on conservative management. One patient had episodes of hemorrhage four days and one day prior to admission and had been treated conservatively for one week when he had a third hemorrhage, which was fatal. This patient had multiple aneurysms. A second patient had two hemorrhages 26 days and 2 days before admission, had been treated conservatively, and died on the day of admission. A third patient died with his second episode one week after admission and three weeks after the initial hemorrhage. The fourth patient was admitted on the day of his initial episode and died 16 days later, after having had three more hemorrhages while on conservative management.

Two of the three patients who had emergency decompressions had each had two previous hemorrhages and were treated conservatively for some time before being operated on. Neither was too ill to have been operated on previously. The third patient was admitted in coma and operated on immediately. In two of these three cases intracerebral hematomas were evacuated when the decompressions were made. All three of these patients died.

One patient had ligation of the common carotid artery in the neck and died four years later of a recurrent hemorrhage from an aneurysm on the anterior communicating artery. This patient had multiple intracranial aneurysms.

All but 1 of the 10 patients who were treated conservatively or by decompression had had their initial onset of symptoms of aneurysm five days to five weeks previously and were treated conservatively either by ourselves or by referring doctors. One patient was comatose almost from the onset and died one and one-half days after admission. All but one of the seven patients treated conservatively died of another intracranial hemorrhage while under observation. The one who survived had sustained the rupture of his aneurysm five months before we saw him. The results of treatment in all cases are shown in figure 3.

One of the 11 patients treated by intracranial attack died two months postoperatively of another hemorrhage. The remainder have now lived three to five and a half years postoperatively, with the exception of one who was operated on nine months ago. The average duration of life after operation of these 10 patients was four years, as of June, 1956.

Comment

With newer mediums and better techniques we are approaching the point where the patient's age and the condition of his arteries no longer seriously limit the use of carotid angiography. However, cerebral angiography is still not free from dangers, and its use should be reserved for cases in which it is clearly indicated. Its use is imperative in any case of intracranial bleeding in which definitive treatment is contemplated.

Surgical intervention in a moribund patient is obviously disastrous. To wait for two or three weeks for edema to subside as some authors have advocated is in many instances also disastrous. Surgical treatment should be undertaken as soon as the patient's condition warrants it. This will be a matter for judgment on the part of the surgeon in each case. He must always bear in mind that each day he waits he runs the risk that the patient may have a second hemorrhage, which may prove fatal.

Proximal carotid ligation at present is the treatment of choice for aneurysms of the internal carotid artery at or below its bifurcation. It must be clear that principles of flow that apply to an arterial lesion in this location do not necessarily apply to one in a more distal location, particularly when the lesion in question is near or is partially sustained by another artery. The low incidence of complication following ligation of the carotid artery would indicate that the change in blood flow to the ipsilateral hemisphere results in either no neurological alterations or ones that are subclinical in most cases. It can hardly be hoped that ligation of the proximal carotid artery can be permanently effective in lesions around the anterior communicating artery, which must serve as one of the principal channels of blood flow when one carotid artery is occluded.

Clipping of one anterior cerebral artery may in most cases be effective, or in some instances it may be the only possible intracranial procedure. Logue [7] has advocated as an emergency procedure clipping of the

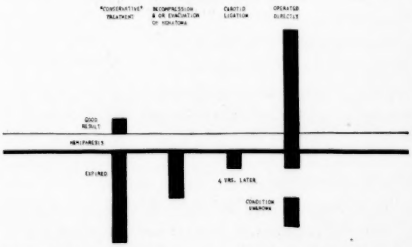

Fig. 3.—Graph showing results of all forms of treatment in the 22 cases reported.

principal anterior cerebral artery supplying an aneurysm in this region. He points out that few patients die as a result of the first rupture of an aneurysm on the anterior cerebral system. However, 25% died as the result of a second hemorrhage within four weeks after the first. The risk of death at the end of four weeks has been dropped to 20% and at the end of eight weeks to 9%. We agree with Logue as to the value of occluding the principal anterior cerebral artery in many cases. However, the certain elimination of the aneurysm is only possible by trapping, by removing the aneurysm, or by clipping the aneurysmal neck. In general these are much more hazardous procedures. Whether the risks of these more certain procedures will be justified as compared with occlusion of the principal anterior cerebral artery, only time and further study will show.

Summary and Conclusions

A follow-up study of 22 patients with aneurysms of the anterior cerebral system has been made. Seven patients were treated by conservative management. Three patients had surgical decompression and evacuation of a hematoma. One patient had ligation of the

common carotid artery in the neck. All but 1 of these 11 patients died. Eleven patients were treated by intracranial clipping of the anterior cerebral artery or trapping of the aneurysm. One of these patients died, one has hemiparesis and aphasia, which were present prior to operation, and the condition of two others is not known. The remaining seven are all well and active. The average postoperative follow-up on these patients is four years.

On the basis of this study, angiography is thought to be a necessary prerequisite to the proper treatment of intracranial hemorrhage resulting from the rupture of an aneurysm. "Conservative" treatment of ruptured intracranial aneurysm carries with it an appalling mortality and is the most dangerous form of management of aneurysms of the anterior cerebral system. Proximal carotid artery ligation cannot be relied upon for cure of aneurysms in this location. Clipping of one anterior cerebral artery may be adequate, but whenever possible the aneurysm should be excluded from the circulation. The anterior cerebral artery on either side may be clipped with relative safety, and this may be done while operating under controlled arterial hypotension.

250 E. Superior St. (11) (Dr. Bucy).

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The Family Physician in Medical Education.—General practitioners are brought into the medical school to conduct a teaching program. . . . The ability of specialists to teach the facts and techniques of their respective fields is a fact too well established to require comment from me. The general practitioner's value to medical school lies in his unique qualification as family doctor. He is a specialist, if you will, in family medical care. It is our intention, therefore, to supplement—not replace—the other clinical courses, correlating facts taught by the various specialists, and integrating this information with a knowledge of family environmental and interpersonal influences which bear on health. Furthermore, under our supervision, students are permitted to apply their knowledge by observing and caring for people in family units. It is now widely recognized that something has been missing in medical education; that what should have been everybody's business has become, in fact, nobody's. Fifty years ago medical education was sick, and the "treatment" prescribed to cure its ailment was specialization. The beneficial effects of this treatment have been obvious for many years. There is ample evidence to support the claim that specialization both in teaching and in practice was not only necessary but desirable. It was only recently, however, that some rather unpleasant "toxic" side effects became apparent. There was an inordinate pre-occupation with the diseased organ or system and too little attention paid the patient. Pursuing the diagnosis and attacking the disease ceased to be merely means used to relieve the suffering of patients and became instead ends in themselves. The gap between academic medicine and private practice widened, and murmurs were heard that the schools were training technicians and super scientists rather than clinicians. It began to look like a case of "the operation was a success but the patient died." In recent years, educators began to realize what was happening and took action to combat these undesirable side effects. Many plans have been developed at various schools to accomplish their common objective. The University of Mississippi has selected the family physician to do the job. It has invited general practitioners to plan and operate their own section's teaching program.—L. F. Rittelmeyer Jr., M.D., The Family Physician in Medical Education, *The Mississippi Doctor,* July, 1956.

AVAILABLE NEW DRUGS FOR SYSTEMIC CONTROL OF PREVIOUSLY DIFFICULT PAIN PROBLEMS

John S. Lundy, M.D., Rochester, Minn.

• *The antagonisms among drugs have a double usefulness, as when a neurostimulant is used to overcome the excess of a depressant or vice versa. Special interest attaches to pairs of drugs that are closely related chemically but have opposite effects. A representative pair are the sodium salts of barbituric acid (a sedative) and of Megimide, which has a chemical structure very similar to that of a barbituric agent. A similar relation exists between morphine and nalorphine, which are thought of as competitive antagonists. Drugs that act on enzyme systems to dissociate the oxidizing from the phosphorylating reactions are also of current interest. New preparations for relieving tension, preventing nausea, and obviating postoperative pain are available, and a variety of nonbarbiturate sedatives and hypnotics here described can be adapted to special situations. The possibilities are such that the entire array of agents available to the anesthesiologist should be exploited to the utmost.*

Serendipity, or the fortuitous discovery of one thing during the search for something else, can happen in anesthesiology as well as in other endeavors. Thus it comes about that we often find uses for drugs that are very different from the uses originally intended. For example, it came to be known, a long time ago, that the effects of an overdose of a barbiturate could be somewhat antagonized by means of a convulsant drug such as pentylenetetrazol (Metrazol) and vice versa.[1] Moreover, Zerfas [2] once told me of a case in which, at the Indianapolis City Hospital, an enormous dose of strychnine had been ingested, yet the resultant convulsions were controlled by means of amobarbital (Amytal) sodium (at that time the agent was not generally available, and its properties were not fully understood). The convulsions, in fact, were controlled until the strychnine was destroyed by the patient's body.

Antagonists of Barbiturates and Morphine

Recently a drug called Megimide (β-ethyl-β-methylglutarimide) has been used to antagonize the usual effect of a barbiturate. As can be seen from the chemical structure (fig. 1), it is in itself a cyclic derivative of glutaric acid, which produces convulsions and will produce effects that can be recorded in the electroencephalogram. Holten [3] is represented as saying:

> From the formula of methylethylglutarimide it is possible to conceive that the substance can act as a competitive inhibitor—an effect which is similar to the antagonistic action of dicumarol [bishydroxycoumarin] to vitamin K, and that of malonic acid to the splitting of succinic acid by dehydrogenase. In any case it is an effect of this type that Shaw imagined. Then it should be an inhibition of the combining of barbituric acid with cellular enzymes, particularly of the nervous system.
>
> There is barely sufficient experimental data concerning this at the moment. But biological tests in experimental animals are being carried out. Shaw has investigated its effect in mice, rabbits, cats, and dogs. The injection of Megimide into barbiturate-poisoned animals resulted in the narcosis being lightened so that rabbits could alternately be brought under narcosis with thiopentone [thiopental sodium] and awakened with Megimide. Shaw has carried out electroencephalography in dogs after injection of barbiturate, and the E. E. G. was observed to become rapidly normal after injection of Megimide.

Many years ago Eli Lilly & Company, Indianapolis, and Abbott Laboratories, North Chicago, Ill., chanced to find a synthetic convulsant barbiturate, 5-(1-3-dimethylbutyl)-5-ethyl barbituric acid (sodium salt). This agent, which I shall call "Diberal," was discarded because it produced convulsions, an action that has been regarded as a desirable quality in several drugs. Actually, to be a good clinical antagonist, the drug probably must be able to stimulate the patient despite the depression caused by the anesthesia or analgesia, the administration of which depends upon whether surgical procedures were done. I shall refer briefly to Diberal again in this text.

In a series of cases in Melbourne and London, it has been possible to save the lives of one patient after another who tried to commit suicide with a barbiturate. Recovery was achieved in a time much shorter than that of any other treatment that was used. Harris [4] wrote:

> Shaw states that NP 13 [β-ethyl-β-methylglutarimide] is quite innocuous; and, using doses of 50 mg. I have seen neither fasciculations nor any other side-actions. When the results in this series of seventy-three cases are considered with Shaw's results in the treatment of barbiturate coma, we may conclude that NP 13 is a barbiturate antagonist of real clinical worth. To omit to use it in the treatment of barbiturate poisoning is to run the risk of the bronchopneumonia that is so often fatal in such case. Its use after surgical anaesthesia can be valuable but is more limited because the patient may be under the influence of central depressants other than barbiturates. In the hands of the biochemist it should prove a useful tool in investigating the nature of the affected biophase during narcosis.

Professor Shaw [5] has written the following to me: "We are also working on the mode of action of Megimide. At the present time we lean to the view that Megimide does not antagonize barbiturates at the cellular level but may act on the reticular activating

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system. We have a fair amount of evidence to suggest that the action of barbiturates on motility of the intestine, conduction of the nerve impulse, etc., is not influenced by Megimide. As yet we have little evidence to suggest that it is acting on the reticular activating centre."

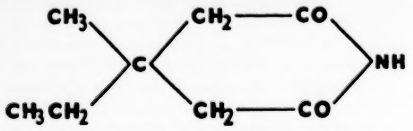

Fig. 1—Megimide (β-ethyl-β-methylglutarimide).

Daptazole is 2:4-diamino-5-phenylthiazole hydrochloride (fig. 2). This substance appears to be a weak barbiturate antagonist. It acts synergistically with Megimide. The risk of toxic effects caused by Megimide, which produces cramps when it is administered rapidly and in large doses, is considerably reduced if Daptazole is given with it. Daptazole also has been used to antagonize the side-effects of morphine. Daptazole, because it is a good respiratory stimulant, is used to overcome respiratory depression caused by morphine, and it is employed as an antagonist to barbiturates. It has been recommended for relief of pain caused by advanced cancer.

To find the proper doses of this agent, Shaw and Shulman[6] have worked out a principle of treatment that involves the administration of morphine in ¼-grain (15 mg.) increments, accompanied by 12.5 mg. of Daptazole over a period of one or two days until the desired analgesia is obtained. Both the morphine and the Daptazole are injected intramuscularly, and relief of pain for four to six hours can be obtained thereby.

Therapeutic doses of Daptazole reverse the depressant action of morphine on respiration; higher doses reverse the soporific action of morphine. Still higher doses of Daptazole leave the patient awake and mentally restless, with associated transient muscular twitching, prolonged and forced expirations, and occasional vomiting.

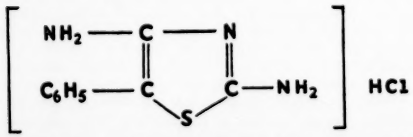

Fig. 2.—Daptazole (2:4-diamino-5-phenylthiazole hydrochloride).

It is my understanding that, if an antagonist has a chemical structural formula essentially similar to that of the depressant, it is much more likely to give a satisfactory result. A good example of this is seen in the case of nalorphine (Nalline) hydrochloride. The structure of this agent (fig. 3) is only a slight variation of the structure of morphine (fig. 4). Nalorphine hydrochloride will produce depression if morphine has not been administered or taken previously, so that the one seems to be a competitive antagonist to the other.

It then becomes provocative to ascertain if there is more than one way to antagonize the effect of a depressant drug. In this respect the electroencephalographic pattern is of real value. Thiopental (Pentothal) sodium, for example, causes a rather characteristic depression of the electrical activity of the cortex of the brain (fig. 5). When this occurs, one thinks of methylphenidate (Ritalin) hydrochloride, which has a stimulating effect on the normal electrical activity of the

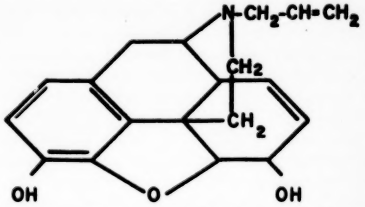

Fig. 3.—Nalorphine hydrochloride (N-allylnormorphine hydrochloride).

cortex of the brain (fig. 6). Practically, methylphenidate will terminate within a minute or two the respiratory depression that occasionally follows heavy preliminary medication and that sometimes occurs after fairly large doses of thiopental sodium given intravenously. The dose of methylphenidate may be as high as 40 to 50 mg. (one dose given intravenously), and this dose may need to be repeated, for it appears that the size of the dose of this drug should be in some proportion to the size of the dose of thiopental sodium used. This, of course, parallels the situation

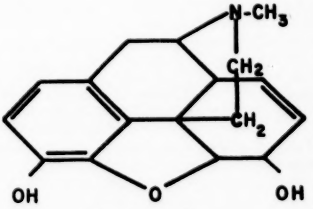

Fig. 4.—Morphine.

in respect to edrophonium (Tensilon) chloride, in which a larger dose of that agent is required to antagonize the effects of curare when the dose of curare is large, as opposed to the situation when the dose of curare is small. Because methylphenidate stimulates the brain and exerts a marked effect, there may be brief vomiting. Often, for some reason, sweating also ensues.

Methylphenidate has been combined with reserpine (Serpasil) to overcome the mental depression that follows the use of Rauwolfia for hypertension. This par-

ticular combination is a good current illustration of the way in which the viewpoint toward the ill-effects of some agents must be changed. That is, discouragement is not necessarily in order if a drug is found to produce some desirable results and some undesirable ones, because, by the proper combinations, it may be possible to overcome the deficiencies of one agent by the supplemental use of another in a given situation.

Sem-Jacobsen and his associates[7] made an interesting contribution to the problem of overcoming barbiturate intoxication. The procedure that they described was employed experimentally and thus far has no practical application, but it warrants repetition here.

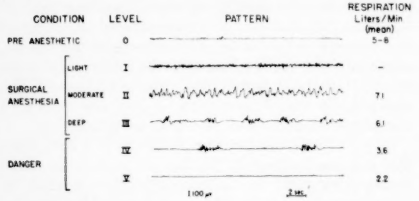

Fig. 5.—Depression of the electrical activity of the cortex of the brain caused by thiopental (Pentothal) sodium.

Vigorous blasts of certain odors on the nasal mucosa of anesthetized patients had strong arousal effects. Not only were electric potentials recorded from the olfactory bulb and from various parts of the brain affected but the clinical state of the patient was changed. Thus, a patient under deep thiopental

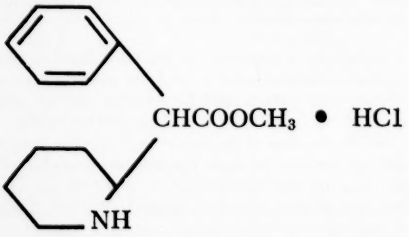

Fig. 6.—Methylphenidate (Ritalin) hydrochloride.

anesthesia would begin to respond shortly after a few blasts of burnt rubber, tincture of valerian, or lilac were directed into the nostrils. Only a few odors had this strong arousal effect. Like room air, most of the odors tested had little or no arousal effect. Thus, it is conceivable that stimulation of the nasal mucosa with strong blasts of certain odors might aid in reviving patients from the effects of overdoses of barbiturates.

Antagonists of Certain Side-effects of Newer Drugs

Levallorphan (Lorfan) tartrate (fig. 7) has been useful to me and to others in the management of the depression caused by anesthetic and analgesic drugs. For example, I had a 50-year-old patient, who weighed about 100 lb. (45.5 kg.) and who appeared to be older than she was. She received, as preliminary medication for an ophthalmic operation, 1/6 grain (10 mg.) of morphine and 1/150 grain (0.4 mg.) of scopolamine. The dose of morphine was repeated in an hour. At the time of operation the patient became cyanotic and was breathing only nine times a minute. She appeared to be in serious condition. She was given 1 mg.

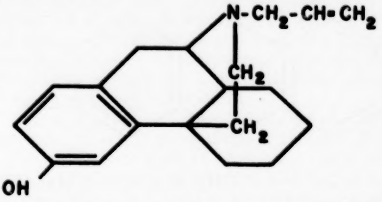

Fig. 7.—Levallorphan (Lorfan) tartrate (3-hydroxy-N-allylmorphinan).

of levallorphan tartrate intravenously in 1 cc. of solution, and within less than a minute her breathing was satisfactory.

Similarly, a boy, 4½ years old, who was to undergo tonsillectomy and adenoidectomy, received rectally 0.2 cc. of a 10% solution of thiopental sodium per pound of body weight. After he lost consciousness, 1 mg. of promethazine (Phenergan) hydrochloride per 10 lb. (4.5 kg.) of body weight was injected intramuscularly and 1 mg. of levorphanol (Levo-Dromoran) tartrate (fig. 8) and 1/450 grain (0.135 mg.) of atropine were given intramuscularly. The cumulative effects of the drugs finally developed, and, when the operation was almost over, the patient stopped breathing and became blue. I was unable to maintain the normal pink coloration by administering oxygen alone, even though examination of the intratracheal tube proved the airway to be patent. I aspirated the respiratory passages to be certain that there was no obstruction in them; finally I administered intravenously 1 mg. of leval-

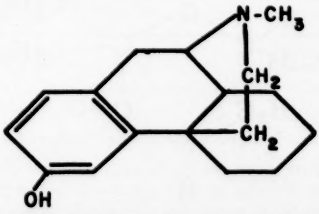

Fig. 8.—Levorphanol (Levo-Dromoran) tartrate (Levo-3-hydroxy-N-methylmorphinan).

lorphan tartrate in 1 cc. of solution on the basis of the knowledge that levallorphan tartrate antagonizes the undesirable side-effects of levorphanol tartrate. Within less than a minute the patient's breathing and color were satisfactory. In neither of these two patients were there any residual untoward results.

Premedication and Anesthesia Inseparable

After long study and reflection, I have arrived at the conviction that the entire array of agents available for anesthesia should be exploited to the utmost. In pursuance of this, I think the anesthesiologist who is to be in charge of the anesthesia also should order the

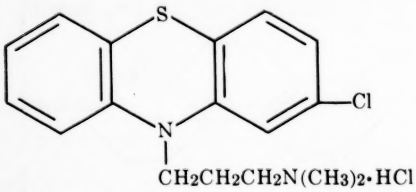

Fig. 9.—Chlorpromazine (Thorazine) hydrochloride.

preliminary medication. This means that he ought to see the patient beforehand; if the operation is scheduled for the morning, the anesthesiologist should see the patient the evening before the operation. If the anesthesiologist has a well-trained assistant who thinks as he does, the assistant may carry out this part of the program. Anesthesia actually starts the evening before the operation. Hence, preliminary medication and the administration of the anesthetic agent are inseparable. My experience has been that premedication can be prescribed in such a way and in such a dosage that the patient will reach the precise stage of tranquillity that I wish to exist when he is placed on the operating table. From that time onward, with minor exceptions, it should be possible to predict the course of events with almost invariable certitude. The ultimate result would be that anesthesia would proceed so smoothly that the state of anesthesia at a given moment could be ascertained simply by a glance at the clock. The program previously decided upon would, in effect, achieve the objective more certainly and more safely than any other conceivable means.

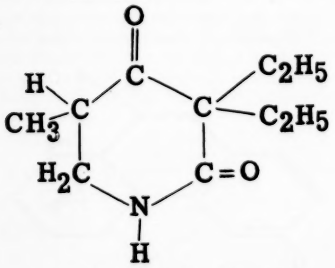

Fig. 10.—Methylprylon (Noludar).

When the average adult is ready to go to sleep on the night before the operation, I administer orally 25 mg. of promethazine hydrochloride. Or, if it is so desired, chlorpromazine (Thorazine) hydrochloride (fig. 9) can be used, and, in addition, 500 mg. of ethchlorvynol (Placidyl), or 400 mg. of methylprylon (Noludar) (fig. 10), or 1½ to 3 grains (90 to 180 mg.) of pentobarbital sodium (Nembutal), or 500 mg. of glutethimide (Doriden) can be administered (see table).

In my experience the use of promethazine hydrochloride in combination with one of these other agents has brought about an uncommonly good night's rest for the patient. I always try to ascertain whether the patient is sensitive to any drugs. I also ask him not to smoke until after the operation. Such counsel has proved to be helpful, especially if the patient ordinarily smokes heavily. A patient who smokes heavily is in the habit of coughing in the morning to rid himself of secretions, and the effects of bedtime medication the night before and preoperative medication on the morning of operation, added to those of smoking, can cause the accumulation of thick mucus to such extent that the intratracheal tube can become obstructed. To liquefy secretions I give one troche of Calcidrine at night and one next morning.

Meprobamate (Equanil or Miltown) is a new drug that induces tranquillity but has no synergistic effect on any other agent. It can be used in place of promethazine hydrochloride or chlorpromazine hydrochloride, and, if this is done, no change in the technique

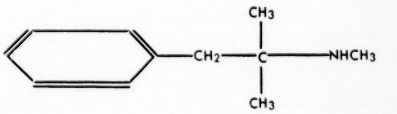

Fig. 11.—Mephentermine (Wyamine) sulfate (N, αα-trimethylphenethylamine sulfate).

of anesthesia is required. On the other hand, if promethazine hydrochloride is used, the rate of injection of thiopental sodium must be retarded and the dose reduced, or respiration will be depressed too much.

On the morning of the operation, I visit the patient and ask him how he slept. This tells me how effective the drug was that he received the night before. As a rule, for an adult patient, I repeat the dose of 25 mg. of promethazine hydrochloride, giving it intramuscularly, and I administer 2 mg. of levorphanol tartrate. Alternatively, I may give ⅛ to ¼ grain (8 to 10 mg.) of morphine and 1/150 grain (0.4 mg.) of atropine. If morphine is employed at this time, the dose ought not to be so large as that customarily used. The reason is that even in a good-sized, robust adult patient, ¼ grain (15 mg.) of morphine plus promethazine hydrochloride may mean that inadequate ventilation or cessation of ventilation may come about after anesthesia has been induced.

When this type of preliminary medication is used and when the operation is carried out with the patient in the supine position, the blood pressure decreases very little. However, when patients thus prepared are operated on while they are under local anesthesia and in a sitting position, blood pressure often decreases

and some nausea and vomiting occur. This state of events requires the intravenous administration of 25 to 50 mg. of ephedrine. Even then, despite the fact that the blood pressure may rise satisfactorily, the patient sometimes does not feel very well. At such a time, 100 mg. of hydrocortisone sodium succinate (Solu-Cortef) solution in 2 cc. of water will improve the patient's mental state, so that he can cooperate by sitting up and placing himself in the proper position for operation.

It has seemed that when the newer agents have been used in preliminary medication as I have described it, decreases in blood pressure have been more frequent, but by the intramuscular administration of 30 to 50 mg. of mephentermine (Wyamine) sulfate (fig. 11) (which activates the electroencephalogram[8]) or methylphenidate at the time the preliminary medication is given, the decrease in blood pressure and the nausea appear to be minimized. If the decrease in blood pressure persists at the time the patient is put in the operating chair, the dose of mephentermine sulfate or methylphenidate can be repeated intravenously.

Newer Nonbarbiturate Sedatives and Hypnotics

Drug	Formula	Indications	Onset, Min.	Duration, Hr.	Side-effects	Advantages	Oral Dose
Glutethimide (Doriden) (1955)	$C_6H_5(C_2H_5)$ C.CO NH.CO.CH_2.CH_2	Insomnia Daytime sedation Preoperative medication	15-30	4-8	Depression of central nervous system (when given in large doses) Occasional nausea, often relieved by antacids Drowsiness and dizziness Skin rash	Nonbarbiturate No hangover Claimed to be nonaddictive	Tablets, 0.25 and 0.5 gm. Hypnotic: 0.25 to 0.5 gm. at bedtime or at least 4 hr. before rising Sedative: 0.25 gm., 3 or 4 times/day, p.c. Preoperative: 0.5 gm. night before, 0.5 to 1.0 gm. 1 hr. before
Meparfynol (Dormison) (1951)	CH-C.C(OH)(CH_3). CH_2CH_3	Insomnia Temporary sedation Premedication for EEG	10-60	2-4	Depression of central nervous system (when given in large doses) Occasional skin rash Belching Unpleasant aftertaste One fatality reported with 5-gm. dose	Nonbarbiturate No hangover Claimed to be nonaddictive Little respiratory depression No cumulative action	Capsules, 0.25 and 0.5 gm. Liquid, 0.25 gm./4 cc. Hypnotic: adult 0.5 to 1.0 gm.; child 0.25 to 0.5 gm. Sedative: 0.25 gm. once or twice/day
Methylprylon (Noludar) (1955)	NH.CH_2.CH(CH_3).CO. $C(C_2H_5)_2$.CO	Insomnia Daytime sedation	30-60	6-7	Depression of central nervous system (when given in large doses) Occasional nausea, drowsiness, dizziness, and headache.	Nonbarbiturate No hangover Claimed to be nonaddictive	Tablets, 50 and 200 mg. Elixir, 50 mg./tsp. Hypnotic: 200 to 400 mg. at bedtime Sedative: 50 to 100 mg. 3 to 4 times/day
Ethinamate (Valmid) (1955)	CH-C(C_6H_{11})O.CO.NH_2	Insomnia	15-25	4	Depression of central nervous system (when given in large doses)	Nonbarbiturate No hangover Claimed to be nonaddictive No cumulative action	Tablets, 0.5 gm. 1 or 2 at bedtime
Ethchlorvynol (Placidyl) (1955)	ClCH-CHC(OH)(C_2H_5).C-CH	Insomnia	15-30	Short-acting	Depression of central nervous system (when given in large doses)	Nonbarbiturate No hangover	Capsules, 500 mg. 1 at bedtime

Control of Postoperative Pain

Control of postoperative pain is achieved better now than ever before. I shall illustrate this statement by adverting to the condition of pain after hemorrhoidectomy. By the use of the new drugs for this operation, all aspects of the procedure have been improved to a satisfactory degree. My method is to administer premedicaments to the patient when he comes to the hospital in the morning. This I do with 25 mg. of promethazine hydrochloride, given by mouth when the patient is put to bed. Then, when the patient is called in the afternoon for the operation, I administer 25 mg. of promethazine hydrochloride intramuscularly, with 2 mg. of levorphanol tartrate.

This procedure considerably improves the status of the patient at the time I carry out sacral block anesthesia. Previously, many of the patients would become nauseated and vomit while I was in the process of carrying out the block procedure. This happened so frequently that I had a device for the administration of oxygen available at the head of the table, and very often it was necessary to administer oxygen to control the nausea and vomiting. Since I have used the preliminary medication in question, not more than 1 in 100 patients is nauseated under such circumstances. This is a very real improvement.

To control pain in the postoperative period I again administer 25 mg. of promethazine hydrochloride intramuscularly, with 3 mg. of levorphanol tartrate plus 20 mg. of Daptazole. Now it can be said that, after all the years of countless attempts to provide the surgeon with the means for the relief of postoperative pain, the objective has been largely attained. So far as hemorrhoidectomy is concerned, the surgeon can assure his patient that he will not suffer during or after the procedure.

Uncoupling Agencies in the Action of Drugs

Brody[9] and Hunter and Lowry[10] have written excellent reviews concerning the uncoupling of oxidation and phosphorylation as a mechanism of the action of drugs. Brody wrote:

> Under normal circumstances the oxidative metabolism of living cells and of certain isolated systems leads to the synthesis of compounds containing high-energy phosphate bonds. These compounds are known to be essential for such functions as growth, muscle contraction, nerve conduction, etc. A number of substances are able to alter this relationship by depressing the formation of high-energy bonds without depressing simultaneously the oxygen consumption of the system. This dissociation of oxidation and phosphorylation is termed "uncoupling."

Many of the substances which have been shown to uncouple phosphorylation from oxidation are drugs which have been employed in experimental pharmacology and therapeutics. Whether the effectiveness of these substances as drugs is dependent upon their effectiveness as uncoupling agents is the consideration of this review. The fact that a substance has the ability to uncouple phosphorylation from oxidation does not indicate that it is devoid of other fundamental actions. The relative importance of uncoupling as a mechanism of action will differ, of course, with different drugs. That uncoupling is of major importance in the action of certain drugs is at present a most attractive hypothesis. . . .

Further study and formulation will surely reveal some of our present concepts to be naive. But so long as we consider the orderly flow of energy through cellular systems essential to normal function, we may consider important any agent capable of diverting this energy stream. . . .

Research in Neurological Enzymes

I have been told that the action of the competitive inhibitor is such that it will change the patient's condition from one of respiratory arrest or depression to one of satisfactory respiration. In some instances, by increasing the dose of the inhibitor, it may be possible to cause the patient to become alert enough to answer questions. It is said that an anesthetic agent such as thiopental sodium comes into contact with the enzymes [1] of the nervous system and causes the enzymes to act upon the nerve cell in such a way as to decrease its normal activity. Possibly the dose of the inhibitor may need to be in proportion to the dose of thiopental sodium. At any rate, when the competitive inhibitor is injected, it displaces the thiopental sodium within a matter of minutes, and the inhibitor causes the enzyme to stimulate the nerve cell. Yet, thiopental sodium is still present in the body, and it can be shown that the amount of the agent in the blood stream is not decreased. Hence, the notion has been advanced that under such circumstances the thiopental sodium no longer is in contact with the enzymes of the nervous system and that it no longer can exert an effect on the nervous system.

Another example of competitive inhibition is that of aminosalicylic acid used in the battle against tuberculosis. This drug is generally believed to inhibit microbacterial growth by competitive inhibition of the enzyme system.[11]

On the basis of reports, I judge that the probability of success of a competitive inhibitor is better if the chemical formula of the antagonist resembles that of the drug that it is to antagonize. Hence, I had entertained the notion that, if I could get a barbiturate such as Diberal, which will produce convulsions, I might have a better chance of antagonizing the effect seen when thiopental sodium is administered. I did some work with the agent, but only in the laboratory and not with patients.

A new compound PAM (2-pyridine aldoxime methiodide [12] has been synthesized at the Columbia University College of Physicians and Surgeons. It will protect mice against poisoning with isoflurophate (DFP), and the synthesis is said to represent a major advance in understanding of the actions of enzymes. It has been known for years that the enzyme cholinesterase controls the hydrolysis of acetylcholine, and acetylcholine is recognized as being directly concerned in the conduction and transmission of nerve impulses. Gases that exert an effect on nerves do so by damaging cholinesterase and thus blocking nervous activity.

When white mice were injected with 100% lethal doses of isoflurophate (an insecticide) and PAM was injected one or two minutes later into the abdominal cavities of the animals, not one animal died. PAM has not yet been administered to human beings, but it may come to be useful as an antagonist in instances of overdosing with certain therapeutic compounds employed against some of the muscular nerve disorders. Moreover, the techniques by means of which PAM was developed surely ought to bring about a better understanding of some presently obscure functions of the nervous system.

The chemistry of enzymes is a relatively new field.[13] It cannot be said that the ideas expressed herein have been proved, but at least there is a degree of satisfaction in the fact that we have some sort of explanation of the phenomena encountered when antagonists are given and the clinical picture is altered suddenly from one of respiratory depression to one without respiratory depression. I hope that untoward side-effects of these new agents will not be encountered.

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SERUM TRANSAMINASE IN LIVER DISEASE

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• *In any disturbance of liver function, whether due to acute infection or to chronic liver disease, where significant areas of hepatic cells undergo necrosis, elevations of the serum transaminase level may be expected. As the liver parenchyma heals and the liver cells regenerate, normal levels are obtained. Normal serum transaminase values have been found to range from 5 to 40 units; with Laennec's cirrhosis the levels were from 13 to 286 units, in biliary cirrhosis from 57 to 330 units, and with viral hepatitis from 540 to 1,890 units of activity. While there has been no constant correlation with other usual liver-function tests, it appears that any process causing death of enough liver cells should increase the serum transaminase activity.*

Since an easily reproducible method for the spectrophotometric determination of the serum glutamic oxalacetic transaminase level was devised by Karmen,[1] investigators in liver disease have become interested in learning about the usefulness of the clinical application of the information imparted by this test. It has been shown that high serum titers of the enzyme result from the administration of carbon tetrachloride to white rats and seem to reflect the degree of parenchymal-cell necrosis in these experimental animals.[2] The purpose of this report is to describe the experience with the determination of the serum transaminase level in patients with various liver diseases.

Methods

Karmen's method [1] was used to determine the transaminase activity spectrophotometrically. By this method, the enzyme activity is determined by measuring the decrease of optical density resulting from the oxidation of $DPNH_2$ (reduced diphosphopyridine nucleotide) to DPN (diphosphopyridine nucleotide, coenzyme I) at room temperature (27±2 C). The system contains alpha-ketoglutaric acid (pH 7.4), serum (0.5 or 0.2 ml.), phosphate buffer (pH 7.4), aspartic acid in buffer (pH 7.4), and purified malic dehydrogenase. Since it has been found [3] that serially diluting the serum in the reaction mixture will increase the transaminase titer, it is imperative to use the same volume of serum for any given patient when the test is repeated at various intervals. In this report, 0.5 ml. of serum was used in all determinations except with enzyme levels greater than 1,200 units, when 0.2 ml. of serum was used. One unit of enzyme activity is equivalent to a change of optical density of 0.001 per milliliter per minute at wave length 340 mμ. When the enzyme activity could not immediately be determined, the serum was frozen and stored at 0 C, at which temperature no significant loss has been found to occur for several weeks.

Serum bilirubin, thymol turbidity, cephalin flocculation, total protein and albumin-globulin ratio, sulfobromophthalein (Bromsulphalein), and alkaline phosphatase values were also determined. The majority of the patients had been seen repeatedly by us in the liver study group over a period of several years; the diagnoses were confirmed histologically in many instances, and the state of hepatic compensation was determined from a combination of the available clinical and laboratory data. Normal serum transaminase values have been found to range from 5 to 40 units.

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Laennec's Cirrhosis

Ninety determinations were done on 81 patients with Laennec's cirrhosis. The serum transaminase activity varied from 13 to 286 units. The majority of these patients had a history of alcoholism and classic findings of cirrhosis at some stage in the course of the disease. Clinically they were divided into two broad groups: those with compensated and those with decompensated liver disease. The patients with decompensated disease had clinical evidence of activity as well as laboratory evidence, based on the usual liver-function tests. The patients with compensated disease usually had a palpable liver and at some time had had diagnostic evidence of cirrhosis; however, at the time of the study they were not clinically ill, and their liver-function tests, although not entirely normal, either had given steady results over a period of time or tended to reflect improvement rather than worsening of hepatic function. The patients with compensated disease were eating well, were frequently working, and were not significantly troubled by their liver disease.

Thirty-nine determinations were done in 38 patients with compensated Laennec's cirrhosis. The average serum transaminase activity was 45 units, just slightly above the upper limits of normal; values ranged from 13 to 150 units. Fifty-one determinations were carried out in 43 patients with decompensated disease. The

average enzyme activity was 79 units, with values ranging from 28 to 286 units. In general, the sicker patients, with increased clinical and laboratory evidence of activity of their liver disease, had higher levels of transaminase activity, although there was no consistent correlation between the results of this test and of any other single liver-function test.

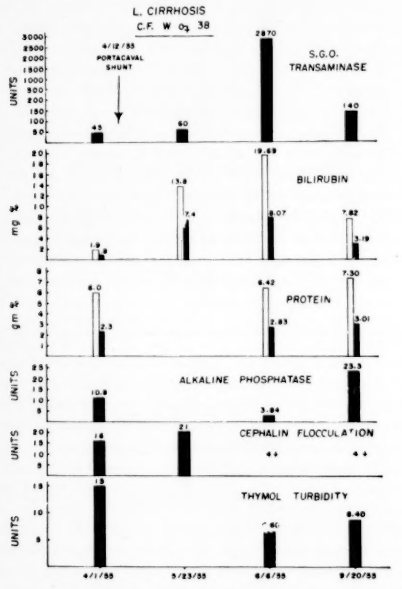

Fig. 1.—Transaminase and other laboratory values in patient with Laennec's cirrhosis. Elevation of transaminase was probably due to homologous serum jaundice.

Determination of the serum transaminase activity was found useful in the diagnosis of serum hepatitis in a patient with Laennec's cirrhosis who had undergone a portacaval shunt (fig. 1). This patient had a well-established case of Laennec's cirrhosis, with slight jaundice, palpable liver and spleen, and esophageal varices with a history of hematemesis. On April 4, 1955, a portacaval shunt was carried out to relieve the portal hypertension. The patient responded well after surgery; however, in June the icterus deepened and anorexia became more pronounced. There was little difference in the results of a repeat series of the usual liver-function tests. The serum transaminase activity was 2,879 units. This seemed to be compatible with serum hepatitis, which was most likely due to the presence of homologous serum jaundice virus in blood used at the time of surgery. The patient was rehospitalized, and on a regimen of bed rest he had improvement in his clinical status and in the results of his liver-function tests. Since this illness, his alkaline phosphatase level has remained elevated and his transaminase activity has been greater than one would expect in an uncomplicated instance of hepatitis. He appears to represent clinically an example of continued activity of a chronic deteriorating process in the parenchymal cells. The height of the transaminase activity two months postoperatively in this patient strongly implicates hepatitis as the cause of the further impairment of his liver function at the time of writing.

In one patient with acute liver necrosis superimposed on Laennec's cirrhosis, in whom coma and death shortly ensued, a level of 1,248 units of serum transaminase was found. The elevation of the transaminase value, as seen in figure 2, seems to parallel the clinical picture of coma and impending death. The postmortem examination of the liver in this instance showed widespread parenchymal-cell necrosis.

In one patient with Laennec's cirrhosis who had previously been treated with a portacaval shunt there was a moderately increased serum transaminase level (137 units), jaundice, an increased alkaline phosphatase level, and x-ray evidence of cholelithiasis. After the patient had been prepared for a cholecystectomy with

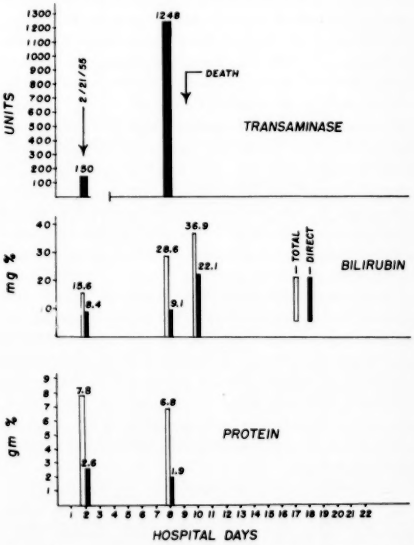

Fig. 2.—Serum transaminase, bilirubin, and protein values in patient with acutely decompensated Laennec's cirrhosis. Patient was comatose before death.

a high-protein diet supplemented with infusions of serum albumin, an exploratory operation was performed. A carcinoma was found that involved the common duct and extended into the liver parenchyma. The necrosis of the liver cells associated with the neoplasm (and cirrhotic process) probably accounted

for the increased transaminase activity, although instances of metastatic cancer involving the liver without causing necrosis or abnormalities of the serum transaminase level have been observed by one of us (D. W. M.). An eventual rise in the serum transaminase level dependent on the extent of necrosis caused by the tumor is expected if the process proceeds long enough.

In two patients with Laennec's cirrhosis and hemochromatosis, levels of 40 units and from 21 to 185 units have been observed. The latter patient experienced increased anorexia and fatigue with the rise in the serum transaminase value. This was believed to represent an increase in the activity of parenchymal-cell degeneration.

From one patient with an enlarged liver due to congenital syphilis with calcification of the gummas, a level of 56 units of transaminase was noted. In a patient with congestive splenomegaly (Banti's disease) who had an enlarged, hard liver, 62 units of transaminase activity was found in the serum.

Biliary Cirrhosis

Higher-than-expected transaminase levels have been found in patients with biliary cirrhosis. In 12 determinations of the enzyme value in seven patients with

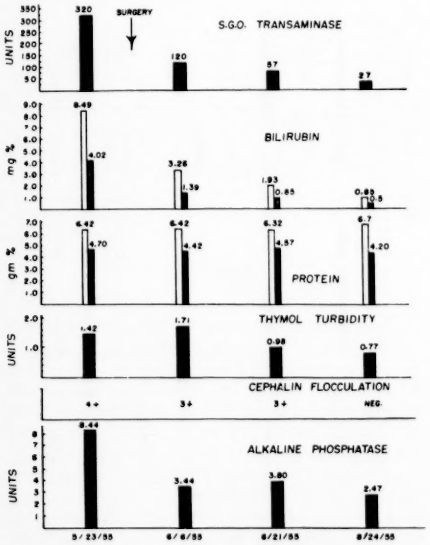

Fig. 3.—Elevated transaminase activity and other laboratory values in patient with obstructive jaundice caused by Hodgkin's disease involving the common bile duct.

long-standing jaundice, palpable liver, xanthomatosis, and pruritus but with reasonably good appetite and without the usual emaciation and digestive complaints so common to patients with Laennec's cirrhosis, the enzyme activity ranged from 57 to 330 units, with an average of 160 units.

This is, admittedly, a small group, but the consistency in the enzyme levels in these patients seems an interesting although completely unexplained phenomenon. Presumably they have enough areas of

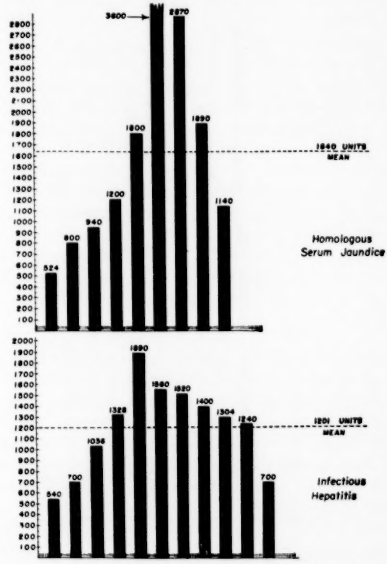

Fig. 4.—Serum transaminase levels in 20 patients with viral hepatitis.

necrosis of liver parenchyma to increase the transaminase activity. One can only speculate on whether the elevated cholesterol and lipid levels in these patients, and perhaps the associated parenchymal necrosis as well, play a part in the disease process. This would not seem to be the entire explanation, however, as the fatty liver seen in diabetic patients is not necessarily associated with an elevated transaminase level.

Obstructive Jaundice

Moderate elevation of the serum transaminase activity level has been noted in patients with obstructive jaundice. An instance is illustrated in figure 3. This patient had Hodgkin's disease that involved the common duct and caused obstructive jaundice. The obstruction was first relieved by the placing of a T-tube into the common duct, and the serum transaminase activity level fell from 320 to 57 units. Actual involvement of the liver by the lymphomatous process was seen neither grossly at the time of surgery nor micro-

scopically in the biopsy specimen. Radiation therapy followed, and a further decline to 27 units of enzyme activity was noted.

Viral Hepatitis

Greatly increased serum transaminase levels early in the course of hepatitis have been reported.[5] In 20 patients with acute viral hepatitis, the serum transaminase activity was 540 to 1,890 units, with an average of 1,398 units. Eleven of these patients had infectious hepatitis and nine had homologous serum jaundice. In the former group the range of serum transaminase activity was 540 to 1,890 units, with an average of 1,200 units. Levels in patients with homologous serum jaundice ranged from 524 to 3,600 units of transaminase activity, with an average of 1,640 units. Figure 4 illustrates the range of serum transaminase activity in these patients. Figure 5 illustrates the laboratory values in a patient with viral hepatitis.

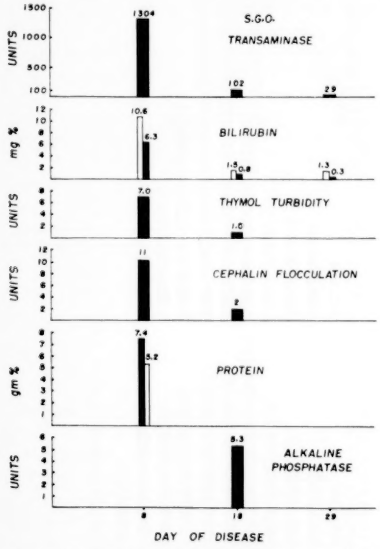

Fig. 5.—Laboratory values in patient with infectious hepatitis.

One other patient, a narcotics addict who had contracted serum hepatitis three months earlier, had a level of 56 units. This rose to 160 units, with exacerbations of his symptoms, due to the patient's disregard of advice as to rest and diet.

One patient who had had infectious mononucleosis and hepatitis three weeks earlier had a level of 25 units. The patient's liver was not palpable at this time, and there was no residual evidence of hepatitis.

Patients who had had hepatitis three or more weeks were studied. In only one patient, with homologous serum jaundice, was an increase in the enzyme activity seen at this stage. In general, by the time the bilirubin level is normal the transaminase activity has also returned to normal. We feel that the presence of greatly elevated levels confirms the presence of hepatitis early in the course of the disease process.

Serial transaminase activity determinations seem to be useful in following the course of patients with hepatitis. Figure 6 shows the course of a 46-year-old woman who after a month of bed rest had 356 units of transaminase activity. When ambulation was started there was a clinical recrudescence of her disease process, with return of anorexia, nausea, and fatigue. A further slight increase in her transaminase activity followed, but, with restitution of bed rest, there was clinical improvement and decline in the transaminase activity to normal. When ambulation was started for the second time, no further difficulty was encountered. It would seem that in such an instance determination of the serum transaminase activity level could be used to predict a recrudescence of hepatitis.

Toxic Hepatitis

Increased serum transaminase activity levels may be seen in patients with toxic hepatitis. Two patients with carbon tetrachloride poisoning, reported on by one of us (D. W. M.) with Wroblewski and LaDue, had levels of 27,840 and 12,300 units of transaminase activity.[5] One patient with toxic hepatitis, studied by us, had a level of 328 units.

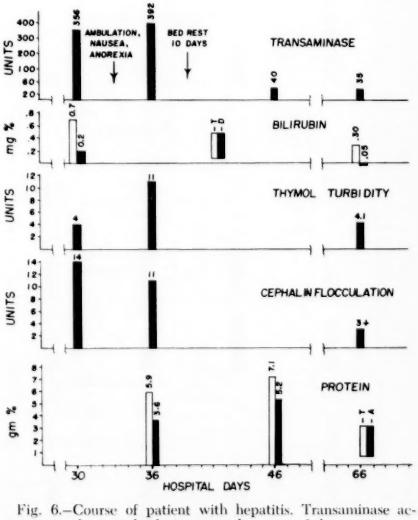

Fig. 6.—Course of patient with hepatitis. Transaminase activity served as guide during recrudescence of disease.

The laboratory values in an interesting case of hepatitis due to cinchophen intoxication are illustrated in figure 7. Cortisone was used in this patient when a deepening of the jaundice occurred in spite of bed

rest and other therapy, including infusions of dextrose and vitamins. This patient improved on steroid therapy, and the serum transaminase activity level seemed to be a useful index of her eventual recovery. This fact, along with the fact that the cholinesterase level was normal throughout the illness, reassured the physicians caring for this patient.

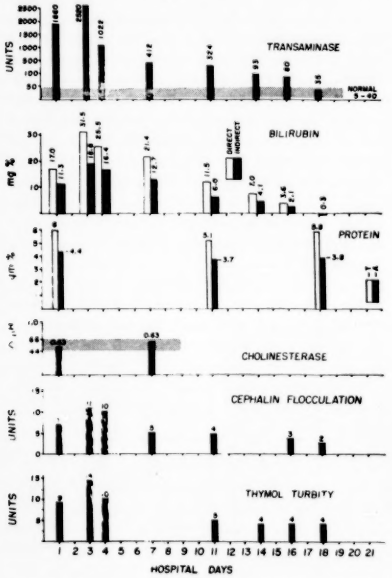

Fig. 7.—Laboratory values in patient with hepatitis due to cinchophen intoxication.

Comment

The level of serum transaminase activity seems to be a useful and sensitive indication of hepatocellular necrosis. In any disturbance of liver function, whether due to acute infection or to chronic liver disease, where significant areas of hepatic cells undergo necrosis, elevations in the enzyme level may be expected.

The striking elevation of the transaminase level in acute hepatitis is in keeping with the known histological evidence of hepatocellular necrosis caused by the invading virus. As the liver parenchyma heals and the liver cells regenerate, normal levels are obtained. It would seem that the best explanation for the elevation of the enzyme levels in these cases is that large quantities of the enzyme are liberated from the necrotic liver cells. As our knowledge increases, further light may be shed on the mechanism of the process; however, this simple explanation is in keeping with our present state of knowledge of the pathological process and with the fact that the liver contains large quantities of the enzyme, exceeded only by the myocardium. Experimental liver injury by carbon tetrachloride has produced marked elevation of the serum transaminase levels.[5]

In chronic liver disease, there is probably a continuing process of death of a certain number of liver cells in association with regeneration. It may be that the slight to moderate elevation seen in patients with portal cirrhosis and biliary cirrhosis reflects this constant destructive process in the liver parenchyma. The higher serum transaminase levels consistently seen in biliary cirrhosis may be related in part to the partial biliary obstruction (intrahepatic or extrahepatic) that exists in these patients. It may be that only when the total effect of the destructive process overcomes the regenerative process that we find patients with clinical decompensation. Admittedly, this is theoretical at the present time, but further experimental work and continued observation in the laboratory on animals under controlled conditions may further elucidate our knowledge.

Summary and Conclusions

Serum glutamic oxalacetic transaminase activity seems to be a sensitive index of hepatic parenchymal-cell viability. In acute hepatitis, early in the course of the disease, high levels of transaminase activity have been observed. Higher levels of transaminase activity are seen in decompensated than in compensated Laennec's cirrhosis. The sicker patients seem to have the higher levels. In patients with biliary cirrhosis, moderate elevations in the enzyme activity level are seen. In a limited group of patients, these levels were higher than the levels in patients with decompensated Laennec's cirrhosis. The reasons for this are not fully understood, but the difference may be due to the partial biliary obstruction that occurs in this disease. In toxic hepatitis, high serum transaminase levels have been observed. Any process causing death of enough liver cells should theoretically increase the serum transaminase activity. Experimental work by one of us (D. W. M.) seems to confirm this. No constant correlation with the other usual liver-function tests has been noted.

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CYSTIC DISORDERS OF THE KIDNEY—CLASSIFICATION, DIAGNOSIS, TREATMENT

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• *It is necessary to classify cystic disorders of the kidney with care because the prognoses of the various entities are quite different, depending on the type of the cysts, whether single or multiple, unilateral or bilateral, simple or complicated, painful or asymptomatic. The nature of the liquid found in the cyst helps to decide whether the lesion is to be considered malignant. Gross specimens, schematic diagrams, and pyelograms are shown to illustrate simple cyst, unilateral cyst with papillary carcinoma visible on part of the wall, cyst secondary to tuberculous pyelonephritis, bilateral familial diffuse cystic disease with preservation of the reniform organ contours and of functioning nephrons, unilateral cystic disease with destruction of both form and function, and other types of cysts that surround all or part of the kidney. The experiences of the authors lead to the conviction that the standard treatment of bilateral familial polycystic disease of the kidneys remains medical except when specific complications exist.*

The purpose of this paper is to review the various disorders of the kidney in which the formation of cysts or cyst-like structures is a predominant or significant feature. Since the literature reveals considerable confusion in terminology and classification of the different types of cystic disease, we wish first to present (see table) a practical classification that, while taking account of etiological and pathological features, is designed primarily to indicate the diagnosis, treatment, and prognosis in any given case.

Simple Cysts

By far the most common cystic disorder of the kidney is the simple cyst with its pathological variations. Aside from their frequent occurrence, their great importance lies in the differential diagnosis between the large simple cyst and the malignant tumor. The term "simple cyst" is used in preference to "solitary cyst" because more than one may be present. They may be unilateral or bilateral, and each cyst may be unilocular or multilocular. None of these distinctions has been of basic importance as we have encountered them.

The etiology of simple cyst of the kidney is obscure. Congenital maldevelopment and acquired obstruction of the finer urinary passageways have been proposed as well as the frequently quoted theory of Hepler,[1] which holds that a combination of obstruction and impaired circulation to a localized portion of the kidney results in cyst formation.

These cysts vary in size from a few centimeters in diameter to a mass holding a liter or more of liquid. From two-thirds to three-fourths occur at the lower pole of the kidney; the majority of the remainder occur at the upper pole; and an occasional cyst arises from the midportion of the kidney. Characteristically the cyst tends to project from the surface of the kidney and "grow away" from the renal substance rather than encroach upon the parenchyma. For this reason actual destruction of kidney tissue is usually minimal (fig. 1 *A*). Grossly, the wall of the cyst is thin; histologically, it is seen to be composed of a single layer of low cuboidal or endothelial type of cell. The remainder of the wall is composed of fibrous tissue. The wall is intimately adherent to the underlying kidney parenchyma, and no well-defined plane of cleavage exists. The contained fluid usually is serous, but in perhaps 15% of the cases the fluid is bloody. This latter finding is associated with malignancy within the cyst wall in a substantial percentage of such cases. Rarely, the contents are purulent.

Diagnosis.—There is no consistent symptom complex associated with simple cyst of the kidney. Indeed, symptoms may be entirely absent and the presence of the cyst detected only by the finding of a mass on routine physical examination, or as an incidental finding on pyelography done for other reasons. On the other hand, digestive symptoms from pressure on adjacent viscera or a dull dragging sensation may be the presenting complaint. Urinalysis is usually normal, although occasionally hematuria is associated with

*Classification of Cystic Disorders of the Kidney**

- Simple cyst ("solitary cyst")
  - Single or multiple
  - Unilateral or bilateral
  - Unilocular or multilocular
  - Serous or hemorrhagic
- Calyceal cyst ("hydrocalyx," "hydrocalycosis," "calyceal diverticulum," "pyelogenic cyst")
- Cyst associated with neoplastic disease
  - Cystic degeneration of parenchymal carcinoma
  - Malignant change occurring in wall of simple cyst
  - Cystadenoma
- Cyst secondary to nonmalignant renal pathology
- Congenital polycystic kidney disease
  - Infantile type
  - Adult type
- Congenital unilateral multicystic kidney
- Peripelvic cyst ("parapelvic," "pyelogenic," "medullary cyst")
- Perinephric cyst ("hydrocele of the kidney," "hygroma renale," "perirenal hydronephrosis")

* Synonyms and alternate or related terms are given in quotation marks.

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benign cyst, perhaps from congestion in the adjacent kidney structures. Hematuria is much more suggestive of a solid tumor, however, and in this important differential diagnosis fever, weight loss, and cachexia indicate malignancy rather than cyst.

Urographically, a sizable simple cyst appears on the plain roentgenogram as a round outline of soft tissue overlying or adjacent to the kidney shadow. Presacral oxygen insufflation and laminagrams may be helpful in delineating this outline (fig. 2 *C* and *D*). Depending upon its location, the cyst may or may not produce changes in the pelvis or calyceal pattern (fig. 1 *B*). While preservation of the terminal cupping of the calyces; crescentic outline, flattening, and elongation of the calyces; and increased density of the soft tissue shadows have been proposed as being more suggestive of cyst than tumor, the identical changes have been encountered with malignant tumors, so that one is well advised to content himself with the diagnosis of "a space-occupying lesion of the kidney" and to base his opinion as to whether the lesion is benign or malignant on factors other than the urogram. Most often this will require surgical exposure.

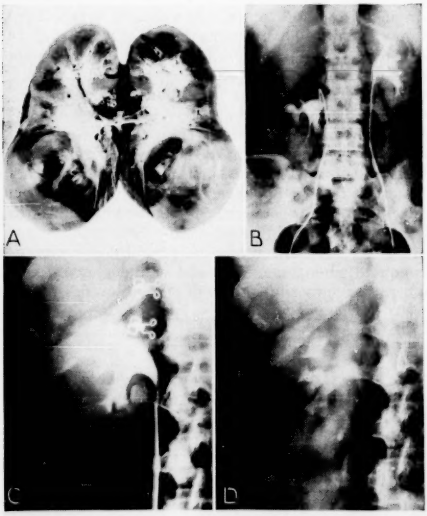

Fig. 1.—*A*, typical simple cyst at lower pole of kidney. *B*, pyelogram of "space-occupying lesion"; diagnosis indeterminate prior to operation; large simple cyst found. *C* and *D*, Preoperative and postoperative pyelogram of cyst excised by method described in text.

A different point of view is expressed by Ainsworth and Vest,[2] who advocate diagnostic tap of the lesion through the flank, followed by injection of contrast medium and making of roentgenograms, differentiate cyst from malignancy. If their clinical impression of simple cyst of the kidney is confirmed by the finding of clear fluid and a round smooth-walled sac, they feel that exploratory operation is neither necessary nor desirable. This ingenious method has found only limited acceptance by urologists in general. We have reserved this method for an occasional case in which the weight of evidence favored the diagnosis of cyst and in which there were other reasons

Fig. 2.—*A* and *B*, retrograde pyelogram and film after injection of cyst cavity with opaque dye through flank. *C* and *D*, retrograde pyelogram before and after presacral oxygen insufflation, showing large simple cyst.

for withholding operation, such as general debility and advanced age (fig. 2 *A* and *B*). Aortography has also been proposed as a method to distinguish cyst from tumor but has not been widely accepted for this purpose.

From a review of the literature, it is apparent that the majority of urologists favor surgical exploration of the patient with a space-occupying lesion of the kidney, which may be either cyst or tumor. We agree with this practice, the reason for which is well expressed by Prather,[3] who states, "Surgical inspection offers the most reliable method of differential diagnosis, permits surgical correction of the lesion at the time, avoids overlooking instances of carcinoma in the wall of hemorrhagic cysts, and assures the patient of the best treatment consistent with the stage of the disease at hand."

Treatment.—In regard to operative technique, the kidney is exposed through the usual loin incision. When one has determined that the lesion is a simple cyst, its removal with preservation of the kidney should be the objective. Extirpation of the cyst can be accomplished either by a wedge incision through

the adjacent kidney tissue with removal intact or by simple excision of the cyst wall flush with the kidney substance, followed by hemostatic suture about the cut margin. We employed the former method for the cases operated early in our series, feeling that removal of the cyst intact and the adjacent kidney tissue was

Fig. 3.—*A*, pyelogram of large calyceal cyst characterized by intermittent pyuria. The patient was asymptomatic when pyuria was present but suffered from loin pain and fever when bladder urine was clear. *B*, pyelogram after surgical excision of the cyst-containing area. *C*, small calyceal cyst, containing stone, in another case.

necessary to exclude malignancy within or underlying the cyst. Such a partial resection through the kidney parenchyma is particularly difficult if the cyst arises elsewhere than at the lower pole and is always attended by considerable bleeding, at times tempting one to do a nephrectomy. For these reasons and since the advantages are largely theoretical, we now simply incise and empty the cyst, inspect its interior and base, and excise the redundant collapsed wall if nothing suspicious is seen (fig. 1 *C* and *D*). This method is also applicable to the deeper lying cyst in the midportion of the kidney, where only a small segment protrudes from the renal surface.

Obviously the above procedures are used only where tumor is not detected either in the kidney itself or in the wall of the cyst. Should the cyst contents appear hemorrhagic when the lesion is first exposed, the wound should be walled off carefully and the cyst opened for direct inspection of its interior. If tumor is present, removal of the previously mobilized organ is then carried out.

In general, however, removal of the kidney is reserved for the rare occasion when little worthwhile parenchyma remains or when there is a thick-walled cyst filled with organized clot that cannot be distinguished from tumor except by microscopic examination.

Calyceal Cyst

Cyst formation involving or in relation to a single calyx is being recognized with increasing frequency.[4] Descriptive terms in the literature for this condition include "hydrocalyx," "hydrocalycosis," "calyceal diverticulum," and "pyelogenic cyst." From reviewing numerous case reports and from our own material, we suggest that the term "calyceal cyst" be used to include this entire group, which admittedly represents three types of origin: (1) a congenital diverticulum of a minor calyx; (2) a pinching off of the infundibulum whereby the isolated dilated calyx itself presents as a cyst; and (3) a communication of a chronic abscess cavity with a calyx. The significant feature common to all three types is that the cystic structure communicates with the collecting system of the kidney, either continuously or intermittently, or it is apparent that such a communication has existed in the past.

The clinical picture is essentially the same, irrespective of the mode of origin, and consists of (1) loin pain, (2) continuous or intermittent pyuria, and (3) stone formation within the cyst (fig. 3 *C*). In the case of a calyceal cyst, confusion with malignancy is not likely to arise, so whether operative treatment is carried out or not depends upon the severity or recurrence of the symptoms. Segmental excision of the cyst-bearing portion of the kidney is indicated where symptoms of infection and formation of calculi warrant (fig. 3 *A* and *B*).

Cysts Associated with Malignancy

The various possible relationships between cyst formation and neoplastic disease have been well considered by Gibson,[5] who lists them as (1) unrelated origin of cyst and tumor, (2) origin of cyst within a tumor, (3) origin of tumor within a cyst, and (4) origin of a cyst distal to a tumor. The practical implication is that every case of apparent benign cyst should be regarded as potentially associated with tumor. This is particularly true if the cyst contents be hemorrhagic and lends weight to the dictum that surgical exploration of space-occupying lesions of the kidney should be carried out unless contraindicated by other factors peculiar to the individual patient. Several examples of cyst combined with tumor are found in our series (fig. 4).

The question arises whether partial nephrectomy is adequate when tumor is found within a cyst. Except where the opposite kidney is absent or deemed incapable of supporting life, we feel that partial nephrectomy for gross tumor within a cyst represents misguided conservatism. Certainly all cysts should be opened and inspected grossly in the operating room before a specimen is sent to the laboratory, and the aid of the pathologist should be enlisted at the time of operation in any questionable case.

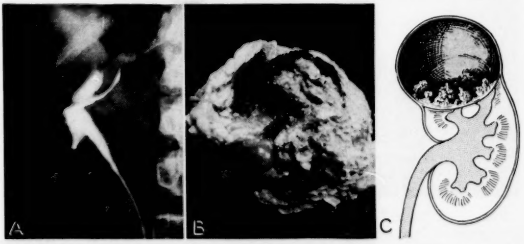

Fig. 4.—*A*, pyelogram, and *B*, surgical specimen of cystic degeneration of parenchymal carcinoma. *C*, sketch of papillary carcinoma arising within cyst wall; contents were bloody; nephrectomy.

Our series contains one case of an extensive cystadenoma removed under the mistaken diagnosis of nephroblastoma (Wilms' tumor). Since these lesions present as neoplasms and can be identified definitely only on histological section, removal of the kidney is the procedure of choice.

Cysts Secondary to Nonmalignant Renal Pathology

In the heterogeneous group of cysts secondary to nonmalignant renal pathology we have included the rare Echinococcus cyst as well as the cystic lesions secondary to renal tuberculosis, calculus, obliterative pyelonephritis, and chronic glomerulonephritis. When such cysts occur, the diagnosis of the underlying disease is usually apparent and the cyst formation is obviously secondary and not likely to be confused with what might be termed "primary cyst." The treatment is that of the underlying disease, nephrectomy being often necessary (fig. 5).

Echinococcus cyst of the kidney is very rare in the United States. However, in Australia, New Zealand, and some of the Mediterranean countries it is not uncommon. The life cycle of the parasite and its urologic manifestations are well described by Reay and Rolleston,[6] whose article should be consulted if one suspects this entity.

Polycystic Kidney Disease

The term "polycystic kidney disease" should be confined to the well-known entity characterized by diffuse involvement of both kidneys by innumerable cysts on a congenital, hereditary basis. As such, the term should not be used indiscriminately as a descriptive one simply to indicate the presence of more than one cyst. Specifically, this disease entity must be differentiated from multiple cyst, multilocular simple cyst, cystadenoma, and "unilateral multicystic kidney" (fig. 6 *A* and *B*). Aside from scientific accuracy, an important practical reason for this is found in the grave prognostic import implied by the diagnosis of polycystic kidney disease as opposed to the relatively favorable prognosis with the other types.

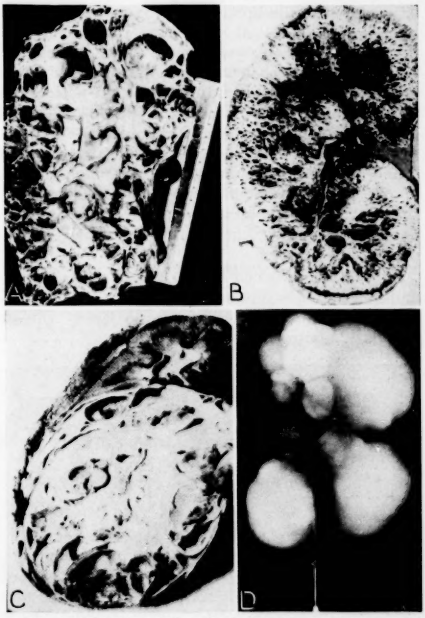

Fig. 6.—Adult form (*A*) and infantile form (*B*) of true polycystic kidney. These should be distinguished from, *C*, multilocular simple cyst (note normal upper portion of kidney), and, *D*, unilateral multicystic kidney.

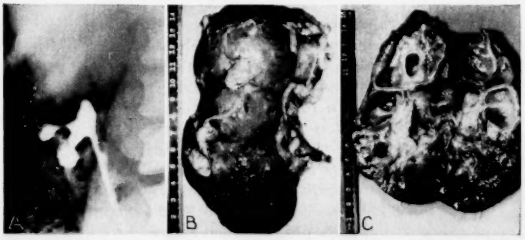

Fig. 5.—*A*, pyelogram; *B*, surgical specimen unopened; and *C*, opened, of tuberculous pyelonephritis with secondary cyst formation.

Etiology.—Explanation of the pathogenesis of polycystic kidney disease probably lies in the dual embryologic origin of the permanent kidney, namely, the outgrowth of the ureteric bud from the Wolffian duct, which becomes capped by condensation of mesenchyma called the metanephric blastema. The pelvis, calyces, and collecting tubules come from the former anlage, whereas the glomerulus, proximal and distal convoluted tubules, and the loop of Henle are formed from the latter. The "failure of union" theory holds that a lack of the normal joining between the two separate tubular systems leads to the development of polycystic kidneys since glomerular filtrate fails to be carried away and cyst formation results. While this theory has the virtue of simplicity, it has not been borne out by detailed serial histological sections and reconstructions, so that currently most authors lean toward acceptance of the theory of Kampmeier.[7] This investigator has shown that, in the sprouting, branching, and rebranching through successive generations of the ureteric bud, some of the early "orders" of buds become separated from the parent lumen, persist for a time as cystic structures, and finally degenerate. He feels that faulty embryogenesis leads to persistence of these vestigial cystic structures, which continue to grow and form cysts within the permanent kidney. Many other theories and modifications have been suggested, but, since the disorder is not susceptible to experimental reproduction, they all contain a considerable element of speculation. Suffice

it to say, then, that the pathogenesis of polycystic kidney disease is not definitely known, beyond the fact that it is a congenital embryologic defect with a genetic basis. Familial studies in many cases attest to the hereditary nature of the disease.

Unilateral Polycystic Kidney.—The disease is bilateral in the great majority of cases, but there are several reports in the literature of "unilateral polycystic kidney." Unless based on autopsy evidence,[8] these reports may well be questioned. The reason for this is that the cystic changes may be far more advanced in one kidney than in the other so that pyelographically the mate to an obviously polycystic kidney may appear normal at the time of examination yet subsequently over the years develop the morphologic changes typical of the disorder. Furthermore, some of the reported cases of unilateral polycystic kidney actually may represent either multiple simple cysts or "multicystic kidney," the latter being congenital but not familial in origin.

As will be described below, it is our feeling that multicystic kidney represents a separate disease entity to be differentiated from polycystic kidney disease in regard to both treatment and prognosis.

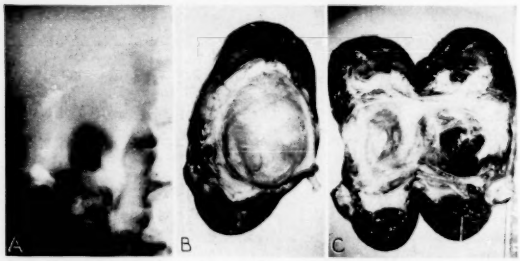

Fig. 7.—*A*, pyelogram initially considered tumor; *B* and *C*, surgical specimen of peripelvic cyst found at operation. We believe this represents a type of simple cyst, peripelvic in location.

Clinical Picture.—Symptoms and other findings in true polycystic disease are well known and will not be detailed here. They have been well depicted by Rall and Odel [9] in a statistical study of 207 cases seen at the Mayo Clinic from 1932 to 1937 plus an autopsy series of 46 cases from 1920 through 1947. The symptomatology and findings in our much smaller series of cases of polycystic disease parallel that of Rall and Odel. Lumbar or abdominal pain, abdominal mass, hypertension, urinary symptoms, hematuria, pyuria, and azotemia all may occur singly or in combination. Yet in many cases no symptoms referable to the kidney will be found and the condition will be discovered only as part of the routine physical examination.

Treatment.—In considering the treatment of polycystic kidney disease, it should be remembered that there is no curative treatment, so that our efforts are confined necessarily to prolonging the patient's life and comfort, and one must determine what type of treatment offers the greatest palliation in each individual case. In reviewing the literature, one encounters considerable divergence of opinion as to what offers these patients the greatest palliation. Although Rovsing early recommended puncture of the cysts in an effort to preserve renal function by relieving pressure on the remaining functional parenchyma, his method fell into disuse, and for many years medical measures stood unchallenged as the standard treatment of polycystic disease. During this interval surgical measures were reserved for the complications of uncontrollable hemorrhage, intractable pain, infection, or coincidental stones, tuberculosis, or tumor.

In 1947 Dodson attempted to reevaluate this problem and concluded that more consideration should be given to the possibility of surgical relief as an elective procedure. Buck, Bunts, and Dodson [10] further reported in 1951 that surgical decapsulation, decortication, and application of Zenker's fluid to the cysts were worthwhile in cases just beginning to show renal functional impairment. Likewise Goldstein,[11] who has long advocated extensive surgical decompression measures, in 1951 reported on 18 operative cases compared with 18 nonoperative cases and concluded that a substantial prolongation of life and comfort resulted in the operative group. Nevertheless, from our own experience with elective decortication and from the published and verbal expressions of other urologists, we believe that the standard treatment of polycystic kidney disease remains medical, except where the aforementioned specific complications exist. Certainly, further experience and long-term follow-up tests of renal function are desirable in the operative group.[12] The medical measures we have found most helpful consist in regulating the patient's activities within the limits of his renal reserve, general supportive measures, systematic attack on the urinary tract infection that is usually present, and attention to fluid and electrolyte balance.

Prognosis.—One reason it is difficult to evaluate surgical procedures in polycystic disease is the fact that so many patients with polycystic disease live for a number of years in comparative health and comfort with no treatment. Numerous case reports in the literature attest to this fact. It is noteworthy that, when the disorder is diagnosed in infancy, the prognosis is extremely poor, usually with early death. In other cases, patients have no symptoms until adult life, and even then the disease progresses slowly. In still others, while the disease does not become apparent until middle life, its progression is rapid. A trend noted in the more recent literature is that the life expectancy of the patient with polycystic kidney disease is considerably longer than was originally supposed. Undoubtedly the use of antibiotics for the prevention of additional kidney damage from infection has contributed to this result. The fact remains, however, that at best the prognosis is invariably poor for uninterrupted good health and longevity.

Another point that arises in advising the patient with polycystic kidney disease is whether he or she should have children, since the disease is known to be familial. Since the average age at death in the larger series is in the neighborhood of 50 years and since by this time one may have led a satisfactory productive life, it would seem unwarranted to advise against child-bearing on the basis of heredity alone. As to the actual hazard of pregnancy to the mother with polycystic disease, the facts would seem to be that there is an increased but not insurmountable hazard. Branham reports an interesting case in this regard.[13] Finally, it should be noted that not all of the progeny of the parent with polycystic disease develop the disease. It would, then, seem preferable to discuss the matter with the prospective parents on an individual basis.

Congenital Unilateral Multicystic Kidney Disease

In 1936 Schwartz [14] emphasized the desirability of differentiating congenital unilateral multicystic kidney from polycystic disease. This subject has been discussed recently by one of us.[15] The striking feature of this lesion consists of the replacement of the entire kidney by an irregularly lobulated mass composed of many cysts, varying in size from that of a pea to that of a hen's egg, which are held together like a bunch of grapes by a loose connective tissue (fig. 6 *D*). Loss of architecture of calyces, pyramids, and cortex results, and indeed no normal parenchyma can be recognized except for an occasional nubbin of solid tissue. The ureter in a few instances has been found to be normal but is characteristically absent, rudimentary, or atretic. These unique characteristics in addition to a unilateral occurrence justify setting it apart from true polycystic kidneys. In both the infantile and adult forms of the latter (fig. 6 *A* and *B*), the reniform contour of the organ and the calyceal pattern, though distorted, are retained, and on microscopic section varying amounts of relatively normal appearing nephrons capable of function are interspersed among the innumerable cysts. The infantile polycystic kidney is sponge-like in appearance due to myriads of small cysts of uniform size, whereas the multicystic kidney resembles a cluster of grapes with great variation in the size of the cysts, which number only a dozen or so at most, and the entire mass contains no parenchyma worthy of the name. Multilocular cystic kidney may be distinguished by the fact that (1) the disease process is limited to a portion of the kidney only, so that an obviously normal segment remains uninvolved (fig. 6 *C*), and (2) the larger cysts are subdivided in partitions so that we find cysts within cysts with consequent lobular formation. Similarly, an otherwise normal kidney containing multiple simple cysts may be easily recognized.

The etiology of multicystic disease, like that of polycystic disease, is a subject for conjecture. Goodyear and Beard [16] suggest that the disorder results from congenital ureteral obstruction, the cysts representing dilated and anomalous major and minor calyces. Persistence and growth of rudimentary embryonic structures have been proposed by others. All that we can state definitely is that the process is one of a nonhereditary fetal maldevelopment.

Symptoms and Diagnosis.—The typical finding on physical examination is a unilateral lobulated, abdominal mass in an otherwise healthy infant. Excretory urography shows nonfunction on the involved side, and retrograde pyelography, where carried out, may show absence or atresia of the ureter. Differential diagnosis includes nephroblastoma, hydronephrosis, true polycystic disease, mesenteric cyst, and nonrenal retroperitoneal masses. Treatment consists in nephrectomy after demonstration of a normal kidney on the opposite side.

Prognosis.—The outlook in unilateral multicystic kidney is good, and this should be emphasized in contrast to the outlook in polycystic kidney disease, which is always sinister even where one kidney is apparently normal at the time of the initial examination.

Peripelvic Cysts

When a cyst lies largely within the kidney and bears a close relationship to the renal pelvis, it properly may be called a peripelvic cyst. The following

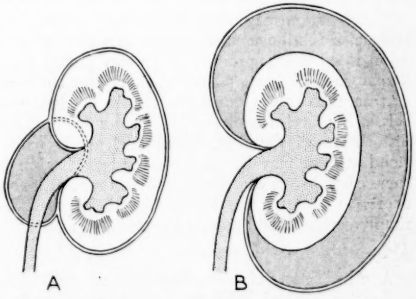

Fig. 8.—*A*, drawing of "parapelvic" cyst at hilum of kidney. *B*, schematic drawing of a perinephric cyst. The liquid accumulates beneath the true capsule, and the analogy between the kidney and the testis in hydrocele of the tunica vaginalis has given rise to the term "hydrocele of the kidney."

three general types have been recognized [17]: 1. Simple cyst, unilateral or multilocular, not unlike the usual variety except for the anatomic location (fig. 7). These are sometimes called "medullary cysts." 2. "Pyelogenic cysts," which apparently develop as outgrowths from and communicate with the pelvis. 3. "Parapelvic cyst," a type that occurs chiefly about the hilum of the kidney and may be the result of blocked lymphatics or may represent mesonephric vestiges (fig. 8 *A*).

Symptoms.—Whatever their origin, peripelvic cysts are of concern to the urologist chiefly in the differential diagnosis of malignant tumor. They are comparatively small but because of their location cause considerable pyelographic deformity. The pyelogenic type is more readily diagnosed, and, as in the case of calyceal cysts, manifest themselves by pyuria, pain, and stone formation. Several cases have been reported

in which peripelvic and parapelvic cysts have been associated with hypertension presumably through the Goldblatt mechanism.

Treatment.—Since peripelvic cysts are difficult to distinguish from malignant tumors even at operation and are difficult to extirpate without damage to the renal blood supply, nephrectomy has usually been necessary.

Perinephric Cysts

We come now to a small group of cases in which there is a collection of fluid about the kidney forming a cyst-like structure entirely enveloping the organ (fig. 8 *B*). The term "perinephric cyst" is descriptive of this condition. Other designations in the literature are "perirenal hydronephrosis," "hydrocele of the kidney," and "hygroma renale." According to their mode of origin, Spriggs[18] divides these into three groups: (1) perinephric extravasation of urine, (2) perinephric hematoma, and (3) perinephric cyst of doubtful origin. In the first group urine finds it way outside of the customary collecting channels and accumulates within either the true capsule or the perinephric fascia. In either case an encysted collection of fluid about the kidney results. Etiologically this type of extravasation may result from urinary obstruction, trauma, or cardiovascular disease in which there is an elevated venous pressure. In Spriggs' groups 2 and 3 one finds perirenal bleeding either spontaneously or from such causes as trauma, erosion of blood vessels, or rupture of aneurysm. It is not unlikely that a disturbance of the renal lymphatics, poorly understood at best, may be the underlying mechanism in some cases. When confronted with this type of lesion, efforts to preserve the kidney should be made by simply excising and draining the cystic structure.

Summary

A classification of cystic disorders of the kidney embracing clinical behavior as well as etiological factors permits the physician not only to institute rational treatment but also to offer a more intelligent prognosis.

4105 Live Oak St. (4) (Dr. Spence).

Figure 6 *B* is reproduced with permission from Anderson, W. A. D.: Pathology, ed. 2, St. Louis, C. V. Mosby Company, 1953, and figure 6 *C* with permission from Frazier, T. H.: Multilocular Cysts of Kidney, J. Urol. **65**:351-363 (March) 1951.

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Histamine in the Organism.—As to the distribution of histamine in the organism, most of our information comes from animals; but combining this with the rather scanty data on human tissues it seems safe to guess that the human body contains several hundred milligrams of it, an amount which would certainly produce a very severe reaction or even death if it were all let loose at once. Practically every tissue that has been examined contains measurable amounts; the concentration varies however not only from tissue to tissue, but also from one individual to another. Mucous and serous membranes are often particularly rich in histamine, and substantial amounts are also found in association with striated and smooth muscle, and in skin and subcutaneous tissue. There is no striking sex difference, but in some organs the concentration appears to increase with age. The recent works of Riley and West in Scotland and of Graham and her co-workers in St. Louis have shown beyond any doubt that a great deal of this stored tissue histamine is located in a particular kind of cellular element, the mast cells. . . . The mast cells, however, are not the whole of the histamine story. The platelets of rabbit blood and the neutrophil leucocytes of human blood contain stored histamine, and it seems highly probable that there is also a good deal in smooth muscle cells and gland cells, that is to say, in cells which are often themselves very sensitive to free histamine.—F. C. MacIntosh, Ph.D., Histamine-Releasing Drugs, *Annals of Otology, Rhinology and Laryngology*, June, 1956.

TREATMENT OF CEREBRAL METASTASES FROM BREAST CARCINOMA WITH PREDNISOLONE

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• *The effects of prednisolone were studied in 22 patients with neurological symptoms resulting from cerebral tumors. The primary lesion was mammary carcinoma in 15 cases and bronchogenic carcinoma in 2; in one patient each it was uterine carcinoma, malignant melanoma, and pancreatic carcinoma. Two patients had inoperable primary tumor of the brain: one acoustic neurinoma and one craniopharyngioma. The basic dose was 50 mg. of prednisolone twice daily by mouth, generally continued for three or four months. Remarkable temporary improvement in neurological symptoms was seen in 14 patients. This effect usually was not explained by any actual regression of the tumors or by any simple relation to the nature of the primary lesion. It seemed most likely that the relief afforded by prednisolone depends on its anti-inflammatory effect and that lesions surrounded by edema improve somewhat while those surrounded by hemorrhage are unaffected. The favorable effects lasted several weeks to several months, but in one patient still continue after 15 months of therapy.*

Since the pioneer work of Huggins, adrenalectomy has become an accepted form of therapy in disseminated breast carcinoma.[1] Because of its unpredictable value to the individual patient and because of the transient nature of the regressions produced, attempts have been made to obtain comparable, if not better, regressions by medical means. The disappointing results obtained with varying doses of cortisone have been reported previously.[2] In 1955 and 1956 we used relatively large doses of prednisolone to treat more than 50 patients with this disease in order to determine if the adrenal suppression thus produced would result in tumor regression. The results of treatment obtained in 45 of the patients will be reported in detail elsewhere. One of the first patients so treated had extensive cerebral metastases with marked mental confusion, aphasia, and right hemiparesis. Because of the rapid and dramatic improvement in neurological symptoms noted in the patient, a larger series of patients with cerebral metastases from breast carcinoma, as well as several patients with other types of cerebral tumors, were treated with the drug. On a few occasions prednisone was substituted. Since no significant differences have been noted by others or by us between the effects of the two compounds, they are discussed here as one compound.

Method

Fifteen women with neurological manifestations of cerebral metastases from a primary breast carcinoma and six women and one man with other types of brain tumors were included in the study. Patients in the latter group had the following types of tumors: three, bronchogenic carcinoma; one, uterine carcinoma; one, malignant melanoma; one, acoustic neurinoma; and one, craniopharyngioma.

The patients were followed by the same group of physicians throughout the study, except for one with bronchogenic carcinoma, who was followed by Dr. O. Kofman, Toronto, Canada. In addition to the routine taking of a history and physical examination, each patient had careful neurological examinations at frequent intervals. The course of the neoplastic disease was observed during therapy and compared with the effect on the symptoms of cerebral metastases. Measurements of visible lesions were charted on all visits. Patients with disseminated breast carcinoma had chest roentgenograms and bone surveys at three-month intervals, or more often if indicated, as well as frequent determinations of serum calcium, inorganic phosphorus, and alkaline phosphatase. Serial electroencephalograms were followed on some. A few patients were studied for changes in adrenal cortical function as determined by urinary 17-hydroxysteroids and 17-ketosteroids.

Each patient received 100 mg. of prednisolone by mouth daily, 50 mg. on awakening and 50 mg. at bedtime. If the dosage failed to control the neurological symptoms, daily doses up to 400 mg. were used. When the medicament could not be ingested orally, hydrocortisone in doses of 100 to 800 mg. per day or prednisolone, 200 mg. per day, was given intravenously. The effective dosage was continued for three months or more in patients with disseminated breast carcinoma unless side-effects or rapid progression of the disease necessitated an earlier change. If, after several weeks, therapy proved ineffective in patients with tumors not of the breast, the dosage was gradually reduced and the drug withdrawn. Anticonvulsive therapy was given if prednisolone alone did not control convulsive seizures. Sodium was not restricted, and supplementary potassium was not given unless specifically indicated. Because of the high incidence of gastrointestinal ulcers noted with large doses of prednisolone, a modified ulcer diet and antacids were given to most of the patients.

Observations

A comprehensive summary of all the patients with disseminated breast carcinoma is presented in the table. Nine out of 15 patients had a definite improvement in their neurological symptoms. One patient de-

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veloped clinical evidence of cerebral metastases while receiving prednisolone for disseminated disease. Three of the patients who failed to improve had cerebellar involvement. Another patient had fulminant progression of the disease.

The improvement in the neurological picture was often rapid and dramatic. Changes sometimes appeared within a matter of hours, but at other times the improvement occurred gradually over a period of days. The improvement noted in these patients included amelioration of such symptoms as headache, vomiting, mental confusion, generalized convulsions, Jacksonian seizures, papilledema, aphasia, dysarthria, muscular weakness, and abnormal sensations. In general, improvement occurred while the generalized growth of the tumor continued. Discontinuance of therapy usually resulted in reversal of the neurological picture. The minimal dosage required to control the symptoms in each of the patients could only be determined by trial and error and varied widely with each patient. As the disease progressed, larger doses of prednisolone were required to control the neurological symptoms. The longest duration of improvement is in the patient who has continued to improve after 15 months of therapy and who has had generalized regression of the metastatic disease for 9 months. Improvement was seen both in patients who had undergone an adrenalectomy and in those who had not. Dramatic improvement usually was not accompanied by corresponding changes in the electroencephalograms.

Data on Fifteen Women with Neurological Manifestations of Cerebral Metastases from Primary Breast Carcinoma

Case No.	Major Neurological Findings	Electroencephalogram	Improvement in Neurological Picture†	Improvement in Electroencephalogram	Generalized Disease	Comments
1	Convulsions, confusion	Abnormal	Marked (2 mo.)	...	No measurable lesions	...
2	Left-sided hemiparesis	Abnormal	Marked (7 mo.)	None	Progression	Multiple side-effects
3	Convulsions, confusion	Abnormal	Marked (15 mo.)	None	Regression	See case report
4*	Decreased vision	...	Marked (4 mo.)	...	Progression	See case report
5	Cerebellar symptoms	...	None	...	Progression	...
6*	Headache, vomiting, convulsions	Abnormal	None	...	Rapid progression	...
7	Headache, vomiting, convulsions	Abnormal	None	...	Progression	...
8	Confusion	Abnormal	Moderate	...	Progression	...
9*	Confusion, aphasia, right-sided hemiparesis	Abnormal	Marked (5 mo.)	Slight	Progression	See case report
10	Cerebellar symptoms	Abnormal	None	...	Progression	...
11	Cerebellar symptoms	Normal	None	...	Progression	...
12	Convulsions	Abnormal	Marked (8 mo.)	Marked	No measurable lesions	Cerebrovascular accident not ruled out
13*	Headache, vomiting, convulsions	...	Marked (1 mo.)	...	Progression	Previously had an adrenalectomy
14*	Convulsions	Abnormal	Moderate (3-4 mo.)	None	Progression	...
15*	Paralysis of sixth nerve on right	...	None	...	Progression	...

* Cerebral metastases confirmed at autopsy.
† Duration of improvement indicated in parentheses; patients 1, 3, and 12 continue to show improvement.

Report of Cases

Case 4.—A 35-year-old premenopausal woman had had permanent loss of vision in her left eye from metastatic breast carcinoma. In February, 1955, her ovaries were removed, and a six months' regression in the pulmonary and osseous metastases occurred along with relief from excruciating headaches. On Sept. 1, 1955, the vision in the right eye was 20/20. By Sept. 30, 1955, it had decreased to 3/300. Administration of 100 mg. of prednisolone daily was started. The next day she noted a definite improvement in her vision. By the end of one week her visual acuity had improved to 20/30 (see figure). Shortly after this the dosage was decreased to 75 mg. per day, and a sharp decline in visual acuity resulted. This improved when the dosage of prednisolone was increased. As the disease progressed, larger doses were required and finally her vision became unresponsive to therapy. Throughout the course of therapy, the growth of other measurable metastases continued. The patient died in December, 1955, and an autopsy revealed generalized metastases, including tumor pressing on the right optic nerve.

Case 9.—A 55-year-old right-handed woman had a left radical mastectomy for adenocarcinoma of the breast in February, 1954. The menopause had occurred in 1950. In June, 1955, she was admitted to the Presbyterian Hospital of Chicago with marked mental confusion, aphasia, and a right-sided hemiparesis involving the face, arm, and leg. There was minimal papilledema of the left optic disk and hyperemia of both optic disks. An electroencephalogram on June 14, 1955, revealed an irregular waking frequency, with high-voltage waves, 1-to-2-per-second, in the left frontal-temporal area with spread to both hemispheres. There was, in addition, an independent slow-wave focus in the right temporal area spreading to the entire right hemisphere.

On June 16 she was given 100 mg. of prednisolone. By the next day she appeared much more alert, could speak, and was able to move her right arm almost normally. Shortly after this she became ambulatory. On June 24 the only neurological deficit was a slight weakness in the right leg, with increased deep tendon reflexes. The papilledema had also subsided. An electroencephalogram taken that day showed essentially the same pattern as the one taken before therapy, but the amount of slowing was less.

Because of the development of diabetes mellitus, the dosage of prednisolone was gradually decreased to 30 mg. per day. In the middle of August a mild exacerbation of her cerebral symptoms occurred. She was instructed to increase the dosage of prednisolone to 50 mg. per day, but she failed to do this and became progressively worse. Because of mental confusion the patient omitted her medication on Aug. 30. Two days later she was hospitalized, with an acute exacerbation of the cerebral symptoms. The neurological examination was essentially the same as before therapy, but the mental confusion was more marked. Rapid and dramatic improvement occurred several hours after reinstitution of therapy.

On Oct. 15 she became confused and lethargic and began to have mild convulsions. At that time hematuria due to a metastasis in the left ureter was noted. Administration of 200 mg. of prednisolone daily failed to bring about improvement. On Nov. 16, 1955, the patient died. A postmortem examination revealed disseminated tumor and widespread cerebral metastases, including tumor in the left parietal area.

CASE 3.—A 45-year-old premenopausal woman was well until February, 1955, when she had a grand mal convulsion. From February to August she had several grand mal convulsions. In August she became progressively more confused and was admitted to the University of Illinois Hospitals, where she was found to have a primary breast carcinoma with axillary metastases. The patient was confused and unable to remember the ages of her children, to recognize individual letters of the alphabet, or to count above 15. The remainder of the neurological examination was essentially normal. An arteriogram was compatible with multiple cerebral metastases. On Sept. 7, 1955, administration of 100 mg. of prednisolone daily was started. Improvement occurred slowly over the next two weeks. Because of aggravation of preexisting diabetes the dosage was lowered to the minimal dosage required to control the cerebral symptoms (20 to 30 mg. per day). In June, 1956, both ovaries were removed because of generalized progression of the disease and an exacerbation of the cerebral symptoms. By December, 1956, 30 mg. of prednisolone per day was still required for control of the neurological symptoms.

Several interesting features were noted throughout the patient's course. She had a generalized tumor regression associated with the occurrence of amenorrhea and hot flashes shortly after the onset of therapy. Progression of the disease at a later date was accompanied by return of menstruation and by exacerbation of the neurological symptoms. The changes in the cerebral symptoms were not accompanied by corresponding changes in the electroencephalograms.

One of the three patients with bronchogenic carcinoma showed marked amelioration of her cerebral symptoms. Severe headaches, vomiting, and mental confusion were controlled for several months. The other two showed improvement in their neurological status, but the changes were not sufficient to rehabilitate them. During therapy the patient with the craniopharyngioma became less confused, and her mood changed from one of vociferous euphoria to thoughtful solemnity. The swelling at the site of the right subtemporal decompression was less pronounced and softer. As the dosage was reduced, the swelling became larger and more tense.

The patient with the uterine carcinoma had a dramatic retraction of her bulging left eye. The other cerebral symptoms, however, were unchanged. The patients with the malignant melanoma and the acoustic neurinoma showed no improvement with prednisolone therapy. In the former, large areas of cerebral hemorrhage surrounding small aggregations of tumor cells appeared to be mainly responsible for the clinical findings. In the latter, cerebral edema was minimal; it should also be noted that this patient had marked cerebellar symptoms.

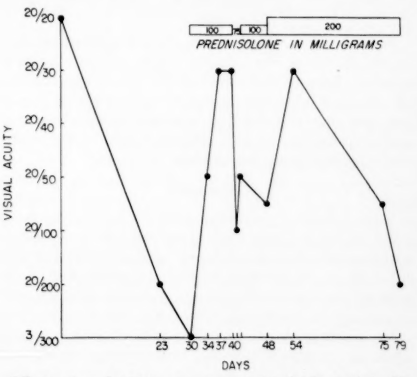
Side-effects

Side-effects were common but usually did not require that the therapy be discontinued. The side-effects included weight gain, moon face, abnormal fat deposition, mental excitement, hirsutism, acne, amenorrhea, infection, diabetes mellitus, duodenal ulcer (one case), quadriceps weakness, and peripheral edema. Quadriceps weakness was not uncommon and was manifested by difficulty in arising from a sitting position and in climbing stairs. Peripheral edema was uncommon. Changes in serum electrolytes were very infrequent. Hypertension or exacerbation of hypertension did not occur.

All patients who had received prednisolone for several weeks or more showed on discontinuance of therapy a marked suppression of urinary 17-hydroxysteroid and 17-ketosteroid levels. In addition, the adrenal response to corticotropin stimulation, as determined by these studies, was less pronounced.

Comment

Prednisolone is a synthetic analogue of hydrocortisone and milligram for milligram is four to five times as potent as cortisone in inhibiting secretion of corticotropin. It also has much less tendency to produce electrolyte disturbances.[3] Because of these facts large doses of prednisolone were used to treat a series of patients with breast carcinoma. Despite the fact that prednisolone therapy produced generalized tumor regression in only 8 out of 45 patients with the disease, 9 out of 15 patients had rapid and dramatic improvement in neurological signs and symptoms. This discrepancy is not too surprising when one considers the fact that symptoms of cerebral tumors may be due to direct tumor infiltration, inflammatory reaction, cerebral edema, or secondary cerebral hemorrhage. The reason for the improvement in many of the patients is not definitely known but may be accounted for by one or more of the preceding factors.



Effects of prednisolone on visual acuity (right eye) in 35-year-old woman (case 4) who had had permanent loss of vision in left eye from metastatic breast carcinoma.

Cerebral tumor regression probably occurred in at least one of the patients. However, it is unlikely that tumor regression would account for the rapidity of improvement or explain the direct relationship of improvement to dosage. Furthermore, it seems unlikely that regression would occur so frequently with cerebral metastases and so infrequently with metastases elsewhere. Dramatic improvement in a patient who had had bilateral adrenalectomy, the rapid reversibility of the neurological findings, and the changes noted in patients who had tumors that were not hormone dependent also suggest that other factors may be important.

The anti-inflammatory effects of certain adrenal hormones, particularly cortisone and hydrocortisone, have been well documented.[4] Administration of adrenal

cortical hormones may reduce cerebral edema. One or both of these factors could explain many of the clinical observations. Russek [5] has attributed the improvement in patients with cerebrovascular accidents after administration of cortisone to a reduction in cerebral edema. The increased effectiveness of prednisolone over cortisone may be due to its greater antiphlogistic properties and to its decreased tendency to cause sodium retention. We have recently seen a patient who developed marked cerebral, facial, and neck edema after a total thyroidectomy, bilateral neck resection, and jugular vein ligation for extensive thyroid carcinoma. These complications persisted until therapy with 100 mg. of prednisolone daily was started, and within 48 hours there was a remarkable decrease in facial and neck edema and the cerebral bulging of the subtemporal decompression became smaller and softer. Withdrawal of prednisolone resulted in recurrence of a moderate amount of facial edema. This observation seems similar to that made in the patient who had a craniopharyngioma.

Russek [5] noted the failure of cortisone to produce improvement in the clinical course of patients with cerebral hemorrhages. Failure to obtain amelioration of symptoms in some patients with cerebral tumors may be due to secondary cerebral hemorrhage surrounding the tumor cells. This was seen in the patient with the malignant melanoma.

Summary

Large doses of prednisolone were used in the treatment of 15 patients with symptoms of cerebral metastases from breast carcinoma and in 7 patients with other types of cerebral tumors. Improvement of the neurological picture was seen in nine patients with disseminated breast carcinoma. The improvement was often remarkable and in one patient still continues after 15 months of therapy. Improvement in cerebral symptoms was seen in five of seven patients with other cerebral tumors. In only one of the patients was the improvement worthwhile to the patient. Clinical changes correlated poorly with changes in the electroencephalograms.

Addendum

Since submission of this paper for publication, we have treated several other patients with this form of therapy. One patient with an inoperable glioblastoma multiforme had only minimal improvement in his mental status during therapy. One patient with a breast carcinoma has continued for several months to have improvement in her hemiparesis. Two patients with primary squamous cell carcinoma of the tongue and bilateral resections of the neck developed lymphedema from tumor metastases and radiation fibrosis. Both these patients had a dramatic decrease in their lymphedema. One of them had marked edema of the face, tongue, and hypopharynx. When the dose was lowered from 100 to 20 mg. per day, there was an increase in the lymphedema, but it was still less than prior to therapy. The patient with the suspected branchogenic carcinoma followed by Dr. O. Kofman, of Toronto, Canada, was found at autopsy to have widespread metastases, and, although the primary source was not definite, it was believed to have originated in the pancreas.

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The prednisolone used in this study was supplied as Meticortelone through Dr. Edward Henderson of Schering Corporation, Bloomfield, N. J.

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Rural and Urban Death Rates.—The large cities appear to have evolved an environment into which children are born and grow up at no disadvantage, and even at some advantage, to their rural cousins. The mortality experience of the adult population, however, is far less favorable in the cities than in the rural areas, and more so in the metropolitan central cities than in the nonmetropolitan cities. The metropolitan rural, enjoying many of the advantages of both city and rural life, and a relatively high standard of living, has the lowest total death rate among the several sectors of the population. By middle age, however, these advantages are offset by negative factors related in some way to the urban aspects of suburban living.—Elizabeth Parkhurst, Differential Mortality in New York State, Exclusive of New York City, by Sex, Age, and Cause of Death, According to Degree of Urbanization, *American Journal of Public Health*, August, 1956.

CLINICAL NOTES

USE OF PHENTOLAMINE TO PREVENT NECROSIS DUE TO LEVARTERENOL

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The widespread use of levarterenol (Levophed) bitartrate in the treatment of shock has created the serious complication of ischemic necrosis, which occurs in areas of extravasation and along the course of the infused veins.[1] Such ischemia is more likely to occur on the lower extremity [2] and with larger doses and prolonged administration of levarterenol.[3] Skin grafting [1] and even amputation [2b] have been necessary with larger areas of ulceration. The originally recommended treatment by the local application of heat and the local infiltration of procaine hydrochloride solution into the ischemic area have not often prevented the development of ischemic necrosis. Because of the antiadrenergic action of phentolamine (Regitine) methanesulfonate,[4] it was first tried empirically in 1954 in case 1, reported below.

Report of Cases

CASE 1.—A 76-year-old woman was admitted to Beth Israel Hospital on Nov. 24, 1954, in shock and stupor due to a severe infection of the urinary tract. Her blood pressure was 78/35 mm. Hg. At 2:45 p. m. an intravenous drip of 8 mg. of levarterenol in 1,000 cc. of a 5% solution of dextrose in water was set up in a vein on the dorsum of the right hand. At 4:45 p. m. approximately 200 cc. of the solution (1.6 mg. of levarterenol) had infiltrated into her hand and forearm. Her right hand and forearm were swollen, pale, and cold. The levarterenol drip was discontinued, and two things were done to prevent irreversible ischemia. Six puncture holes were made in the infiltrated area with a 20-gauge needle, and about one-half of the fluid was milked out. Then 5 mg. of phentolamine dissolved in 20 cc. of water was infiltrated throughout the involved area. The pallor and coldness disappeared in five minutes. The patient's blood pressure did not drop and was subsequently maintained by intravenously given fluids alone. The next day her hand and forearm were pink and warm and no necrosis appeared. The patient recovered.

CASE 2.—A 64-year-old man had a prostatectomy complicated by sepsis and shock. Blood pressure was successfully maintained by a slow drip of 12 mg. of levarterenol in 5% solution of dextrose in water. Extravasation in the left forearm resulted in a pale cold area measuring 8 by 10 cm. Phentolamine (5 mg. in 20 cc. of water) was injected locally. The ischemia disappeared in seven minutes. Blood pressure was maintained by the levarterenol drip set up in a right antecubital vein. The patient died two days later of sepsis and apparently recurrent pulmonary emboli.

CASE 3.—A 63-year-old man was admitted to Beth Israel Hospital. In the course of a suprapubic prostatectomy under spinal anesthesia, the patient went into shock. Blood pressure was unobtainable. Treatment with levarterenol (12 mg. per liter of 5% solution of dextrose in distilled water) was started. The blood pressure was maintained at 150/90 mm. Hg for 10 hours, after which the levarterenol infusion was stopped. During this period two extravasations occurred, one around the patient's elbow while he was in the operating room and the second on the dorsum of the hand, wrist, and lower forearm just before the removal of the levarterenol drip. Two hours later these areas were noted to be mottled, cold, and bluish white. The fingers were cyanotic. Some of the fluid was expressed through puncture holes. Phentolamine, 5 mg. in 20 cc. of water, was injected into the dorsum of the hand, wrist, and forearm and a similar amount into the volar aspect of the upper forearm. Within seven minutes these areas became pink and warm. The blood pressure level did not drop. The extensor surface of the elbow was not treated with phentolamine through an oversight. The next day this region was painful, indurated, and reddened. A superficial slough measuring 10 by 20 cm. developed within eight days and healed slowly over the next several weeks. The treated areas remained normal.

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Results of Experiments

Experiments were designed to determine whether ischemic necrosis with levarterenol could be artificially produced and, if so, whether it could be prevented by the local infiltration of phentolamine. Experiments were conducted on five rabbits. All injections were made intradermally on the shaved abdomen. Preliminary testing showed that the intradermal injection of a solution of 1 mg. of levarterenol per cubic centimeter regularly resulted in a localized area of ischemic necrosis. The sequence of events was as follows: A wheal measuring 20 to 30 mm. in diameter appeared immediately. Its center remained blanched. A sharply demarcated area of ischemia with necrosis, measuring 5 to 7 mm. in diameter, appeared 24 hours later (fig. 1). The necrosis remained, often covered with a crust for days. Healing occurred with scar formation at the end of five to six weeks. Intracutaneous injection of a solution of 1 mg. of phentolamine per cubic centimeter alone produced a pink wheal 20 to 30 mm. in diameter but no ulceration or other adverse effects.

The effect of the injection of a mixture of 1 mg. of levarterenol per cubic centimeter and 1 mg. of phentolamine per 0.2 cc. in the same syringe was then tested. A wheal 20 to 30 mm. in diameter was produced immediately; however, no blanching occurred, and there was no ischemia at the end of 24 hours. No ulceration developed in any of the test areas in three rabbits (fig. 2).

Experiments were then conducted in which a solution of 1 mg. of levarterenol per cubic centimeter was first injected into the rabbits to produce an ischemic wheal. Then two hours later and six hours later these areas were infiltrated with a solution of 1 mg. of phentolamine per cubic centimeter. The blanching disappeared and ulceration did not develop. However, if 24 hours was allowed to elapse before the phentolamine was injected, necrosis developed in two of three rabbits.

Comment

Noteworthy in the clinical use of phentolamine was the absence of any deleterious effect of the drug upon the blood pressure of any of the three patients. Theoretically, it might have been expected that the injection of an antiadrenergic agent would antagonize the effect of levarterenol systemically and precipitate the original state of shock. The absence of effect on the patients' blood pressures might be due to the neutralization of phentolamine by the levarterenol and its slow absorption into the blood stream.

The dose of 5 mg. of phentolamine in 20 cc. of water was selected in part empirically and in part from the established knowledge that this was a safe dose by intravenous and intramuscular route in normal and hypertensive patients.[5] It is quite possible that smaller amounts would also have been effective. If the results of the experiments on rabbits can be applied to clinical practice, perhaps 1 mg. of phentolamine can be used for each 1 mg. of levarterenol extravasated. There are, however, certain practical difficulties involved in estimating the amount of levarterenol in the tissues and the length of time it has been there. No harm has been observed from the subcutaneous administration of 5 mg. and even 10 mg. of phentolamine. Rather than run

Fig. 1.—Necrosis of rabbit skin 24 hours after the intradermal injection of 1 mg. of levarterenol per cubic centimeter.

the risk of the development of necrosis, it is probably desirable to use a little more phentolamine than is needed.

The literature contains many suggestions for minimizing the danger of ischemia and necrosis resulting from administration of levarterenol. These include the avoidance of veins of the lower extremities,[6] the insertion of a polyethylene catheter via the antecubital vein into the brachial or innominate vein or vena cava,[7] and the application of heat above the location of the needle or catheter. These measures may be helpful in some but not in all cases.

Summary

Three patients developed definite areas of ischemia of at least two hours' duration after the extravasation of levarterenol solution into the subcutaneous tissues.

Fig. 2.—Absence of necrosis of rabbit skin 24 hours after the injection of a mixture of 1 mg. of levarterenol per cubic centimeter and 1 mg. of phentolamine per 0.2 cc.

In all cases, parts of the upper extremities were involved. Phentolamine, 5 mg. in 20 cc. of water, injected promptly into the ischemic tissues, brought about a return of circulation to these areas, and no ulceration developed. Case 3 is of special interest in that two separate areas of ischemia were each treated with 5 mg. of phentolamine, while a third area around the elbow was overlooked and left untreated. A large slough developed around the elbow but not in the treated regions.

A series of experiments in rabbits tend to confirm the therapeutic efficacy of phentolamine in combating ischemia due to levarterenol. One milligram of levarterenol injected intracutaneously on the abdomen of five rabbits regularly produced ischemic ulceration. One milligram of phentolamine injected intracutaneously, simultaneously with, and two hours and six hours after the levarterenol prevented the development of ischemic ulceration. Such protection was not complete when injection of phentolamine followed that of levarterenol by 24 hours.

Addendum

Since the completion of this paper, an article has appeared by McGinn and co-workers [8] describing a case of ischemia due to levarterenol that was successfully treated with phentolamine and hyaluronidase.

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Dr. William Antopol, Director of Laboratories, made valuable suggestions for this study, and Miss Carol Schreiber gave technical assistance.

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5. Footnote 4c and *d*.

6. Footnotes 1, 2*a* and *b*, and 3.

7. Footnote 2*a* and *b*, and 3.

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COUNCIL ON DRUGS

Formerly the Council on Pharmacy and Chemistry

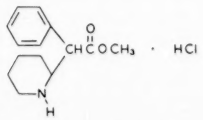
NEW AND NONOFFICIAL DRUGS

Formerly New and Nonofficial Remedies

Monographs and supplemental statements on drugs described here and in subsequent editions of New and Nonofficial Drugs are based on the evaluation of available scientific data and reports of investigations. Applicable commercial names for preparations of evaluated drugs are listed at the end of monographs and parenthetically in the text of supplemental statements; additional commercial names of which the Council is informed will be included with subsequently published supplemental statements and annual editions of New and Nonofficial Drugs.

H. D. KAUTZ, M.D., *Secretary.*

Methylphenidate Hydrochloride.—Methyl α-phenyl-2-piperidineacetate hydrochloride.—The structural formula of methylphenidate hydrochloride may be represented as follows:



Actions and Uses.—Methylphenidate hydrochloride, a central nervous system stimulant, is less potent than amphetamine but more so than caffeine; its sympathomimetic and cardiovascular effects are less than with either of these agents. Thus, in ordinary doses, the drug does not appreciably influence blood pressure, heart rate, or circulation time. Its effects on the gastrointestinal tract are negligible, and, unlike amphetamine, it usually does not produce anorexia. Its metabolic fate, excretion, and distribution are imperfectly known.

Methylphenidate hydrochloride is useful as a mild cortical stimulant in the treatment of various types of depression. The drug has been used for counteracting the various manifestations of depression produced by chlorpromazine and reserpine in neurotic or psychotic patients. Because it ordinarily does not elevate blood pressure, the drug may also be used to antagonize the oversedation, lassitude, and depression often seen in hypertensive patients undergoing therapy with Rauwolfia or its alkaloids. The drug, used alone rather than as an analeptic after central depressants, is likewise helpful in improving mood and behavior and increasing motor and mental activity in patients with certain neuroses and psychoses characterized by depression; neurotic patients appear to respond better than those with frank psychoses. Although the agent

is not a substitute for psychotherapy, its judicious use may be expected to produce some objective and subjective improvement in withdrawn and regressed individuals.

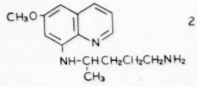
Clinical experience to date indicates the drug to be of relatively low toxicity. While qualitatively similar, side-effects to methylphenidate hydrochloride occur less frequently and with less intensity than with amphetamine. Occasionally, patients experience nervousness, insomnia, anorexia, dizziness, palpitation, headache, and nausea; significant changes in blood pressure and pulse rate rarely occur. Long-term administration of the drug may be complicated by the development of tolerance, but clinical studies to date indicate that this is not an important problem. The drug is contraindicated in patients with hyperexcitability and agitation and should be used cautiously in those with epilepsy or hypertension. Although there is no evidence to indicate a proper antidote for gross overdosage, pharmacological considerations would probably dictate administration of barbiturates. In the absence of adequate toxicity studies in man and animals, however, especially in experiments involving chronic administration, the ultimate safety of methylphenidate hydrochloride after long-term administration to human patients is uncertain.

Dosage.—Methylphenidate hydrochloride is administered orally in divided doses. Although dosage varies according to the therapeutic indication and the individual response, the usual dose for adults is 10 mg. two or three times daily.

Applicable commercial name: Ritalin Hydrochloride.

Ciba Pharmaceutical Products Inc. cooperated by furnishing scientific data to aid in the evaluation of methylphenidate hydrochloride.

Primaquine Phosphate, U. S. P.—8-(4-Amino-1-methylbutylamino)-6-methoxyquinoline diphosphate.—The structural formula of primaquine phosphate may be represented as follows:



Actions and Uses.—Primaquine phosphate, an antimalarial drug of the 8-aminoquinoline series, is closely related in chemical structure and pharmacological action to pamaquine, pentaquine, and isopentaquine but has a greater chemotherapeutic index than these drugs. Thus, it is highly active against primary exoerythrocytic forms of Plasmodium vivax and P. falciparum, especially the latter. Although it is the only drug of this series that has true causal prophylactic action in well-tolerated dosages in human malaria, this activity is of relatively little practical therapeutic value. It is gametocidal to all forms of malaria, a property it shares with other 8-aminoquinolines. The gametocytes or sexual forms of the blood parasites, however, cause no clinical symptoms and are of importance only in the transmission of malaria to the mosquito. Primaquine also is active against the asexual blood forms of P. vivax in well-tolerated dosages, but its effect is too erratic to be recommended for this purpose. It is almost completely ineffective against the asexual blood forms of P. falciparum, which cause severe clinical manifestations.

Its great clinical value lies in the treatment of relapsing vivax (benign tertian) malaria, in which it effects a radical cure. It is the drug of choice for this purpose since it destroys the late tissue forms (which produce secondary erythrocytic parasites) of P. vivax with greater effectiveness and less danger of toxicity than any other drug. If the drug is administered during the long-term latency period of the infection, complete protection against the development of vivax malaria is obtained. Under these circumstances, radical cure can be achieved by use of this drug alone. For the treatment of acute attacks of vivax malaria, primaquine should be administered in conjunction with a fast-acting blood schizontocide (suppressive) drug such as chloroquine, amodiaquin, or quinine, of which the first two are preferred. This regimen attacks both the erythrocytic and exoerythrocytic, or fixed tissue parasites, thus abolishing the symptoms, preventing relapses, and achieving radical cure of the disease. Primaquine should not be employed alone for suppressive therapy or for the cure of acute clinical attacks of malaria.

Falciparum (malignant tertian) infections, though severe, and dangerous if neglected, are self-limited and of short duration; they do not recur when adequately treated with suppressive drugs. Chloroquine and amodiaquin are superior drugs for their eradication, but quinacrine also is highly effective. Although the concurrent administration of primaquine with one of these suppressive agents will reduce the danger of transmission of malaria from the human host to mosquitoes, this use of primaquine is of only limited value because gametocytes of vivax infections disappear within a few days. Even in falciparum malaria the gametocytes will eventually disappear spontaneously after asexual blood forms (trophozoites) have been eliminated by the suppressive drug. Except under special circumstances, therefore, primaquine should be restricted solely to the prevention of relapses of vivax malaria.

In the usual therapeutic dose (up to 15 mg. of the base in Negroes and 30 mg. in Caucasians), the toxicity of primaquine is low. Because of its wider margin of safety and increased effectiveness, it has almost completely replaced the older 8-aminoquinolines for the radical cure of relapsing vivax malaria. However, when the drug is given to susceptible individuals or in large doses, it is potentially toxic. Abdominal pain and epigastric distress with nausea and vomiting occur occasionally, but they are very seldom severe with recommended clinical dosages. In common with other 8-aminoquinolines, methemoglobinemia may also occur, but this is seldom severe enough to require specific treatment and disappears rapidly when the drug is withdrawn. The two most serious manifestations of toxicity are acute intravascular hemolysis, which in its most severe form may mimic black-water fever, and granulocytopenia or agranulocytosis. The hemolytic effect of primaquine is most likely to occur in darker-skinned races, particularly Negroes, in whom the incidence is approximately 5% when daily dosages

of 30 mg. of the base or more are employed. Clinically significant hemolysis occurs very rarely in light-skinned races at any dosage, or even in the more deeply-pigmented races if dosages of 15 mg. of the base per day are not exceeded. Several hundred thousand apparently healthy military personnel (approximately 10% Negroes) received this dose of primaquine on board troopships, under conditions of minimal medical supervision, with approximately a dozen instances of toxic reactions, none serious. Because only the older cells of susceptible individuals hemolyze, this reaction is self-limited and, in the absence of such complicating factors as salt depletion, dehydration, shock, or renal disease, is usually not serious; gradual recovery occurs even if administration of the drug is continued. Nevertheless, the drug should be discontinued immediately if marked darkening of the urine or a sudden decrease in the blood hemoglobin concentration or leukocyte count occurs.

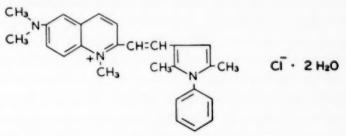
The drug should be given with caution to persons who suffer from severe active rheumatoid arthritis or similar disorders, because these individuals appear to be more susceptible to granulocytopenia. The drug has been administered without untoward effects to persons with sickle cell trait, infectious hepatitis, and severe anemia due to chronic blood loss or hemolysis secondary to intestinal parasitic infestations. The resistance of the anemic patients to further hemolysis after primaquine administration is probably explained by the relatively high proportion of young erythrocytes in their peripheral circulation. Despite this favorable experience, repeated peripheral blood counts, and at least gross examination of the urine, should be carried out during primaquine therapy when the drug is administered in dosages of 30 mg. of the base or more, or when given to severely anemic persons or those with known or suspected drug sensitivity. Primaquine should never be administered with quinacrine or to a patient who has recently received quinacrine, since the latter agent enhances the toxicity of 8-aminoquinolines.

Dosage.—Primaquine phosphate is administered orally. For the treatment of relapsing vivax infections, a daily dose of 26.5 mg. (equivalent to 15 mg. of primaquine base) for 14 days is usually adequate to effect a radical cure. For patients with signs and symptoms of vivax malaria, either as an initial attack or relapse, the foregoing dosage schedule of primaquine phosphate should be initiated together with a standard regimen of either of the following: chloroquine phosphate, 1 Gm. (equivalent to 0.6 Gm. of base) as an initial dose, 0.5 Gm. 6 hours later, and 0.5 Gm. daily for the next two days for a total dose of 2.5 Gm.; or amodiaquin hydrochloride equivalent to 0.6 Gm. of base on the first day as an initial dose, 0.4 Gm. of base daily for the next two days for a total dose of 1.4 Gm. of base. The above doses are recommended for adults weighing about 70 kg. (approximately 150 lb.) of nonimmune populations. For partially immune populations the concurrent dose of suppressive drug may be reduced to 1 Gm. of chloroquine phosphate or 0.6 Gm. of amodiaquin (base), either drug to be given as a single dose on one day only. Occasionally, dosages higher than 15 mg. of primaquine (base) daily may be required for the eradication of certain plasmodial strains. For adult white patients, dosages up to 30 mg. (base) per day may be given on an ambulatory basis without appreciable toxicity. Although a daily dose of more than 15 mg. (base) is considered too toxic for Negro patients unless given under close medical supervision, 15 mg. may be given to ambulatory subjects.

Applicable commercial names: Primaquine Diphosphate, Primaquine Phosphate.

Winthrop Laboratories cooperated by furnishing scientific data to aid in the evaluation of primaquine phosphate.

Pyrvinium Chloride.—6-Dimethylamino-2-[2-(2,5-dimethyl-1-phenyl-3-pyrryl)vinyl]-1-methylquinolinium chloride dihydrate.—The structural formula of pyrvinium chloride may be represented as follows:



Actions and Uses.—Pyrvinium chloride is a cyanine dye used clinically as an anthelmintic. Although it is sparingly soluble and poorly absorbed from the gastrointestinal tract, only about 60% of an orally administered dose appears in the feces; the amounts detectable in urine, blood, or bile are insignificant. Further studies are therefore indicated to determine the fate and distribution of the drug.

Pyrvinium chloride is proposed for the treatment of pinworms (oxyuriasis). On the basis of limited clinical experience, the drug appears to eliminate the worm, Enterobius vermicularis, and its ova with approximately the same effectiveness as do the salts of piperazine. It is not, however, sufficiently active against roundworms (Ascaris lumbricoides) to be clinically useful for this infestation.

After the usual doses of pyrvinium chloride, no serious manifestations of toxicity have been reported. Side-effects are ordinarily limited to gastrointestinal irritation with nausea and/or vomiting. If emesis occurs shortly after its ingestion, the drug may impart a red color to the vomitus. Likewise, the stools are frequently stained reddish-brown. In laboratory studies, bone marrow depression and liver and kidney damage have been observed in one species after administration of large doses for prolonged periods. Thus, a course of treatment in human patients should not exceed the prescribed period of five to eight days, and the drug should be administered cautiously to patients with renal or hepatic damage.

Dosage.—Pyrvinium chloride is administered orally. The usual dose for the treatment of pinworms is 1.5 to 2 mg. per kilogram of body weight. This is administered in divided daily doses for five to eight days.

Applicable commercial name: Vanquin.

Parke, Davis & Company cooperated by furnishing scientific data to aid in the evaluation of pyrvinium chloride.

Use of Metaraminol Bitartrate as a Vasopressor Agent

The Council has evaluated the parenteral use of metaraminol bitartrate (Aramine Bitartrate) as a systemic vasopressor agent. This sympathomimetic amine has been recognized previously as a useful local vasoconstrictor agent for intranasal application to control nasal congestion. On the basis of additional evidence, the Council concluded that the systemic effects of metaraminol bitartrate, when injected parenterally, indicate its usefulness as a pressor agent in acute hypotensive states. Because of a more gradual onset and prolonged duration of action, maintenance of blood pressure with metaraminol is generally more smooth and is subject to fewer of the abrupt variations and excessive responses sometimes observed with other pressor agents. In addition, the drug is not irritating to the tissues and may therefore be administered subcutaneously; accidental extravascular deposition during intravenous therapy has not produced the abscess formation, tissue necrosis, or sloughing produced by some of the other systemic vasopressors. Metaraminol bitartrate is useful for parenteral administration in hypotensive episodes during surgery, for sustaining blood pressure in patients under general or spinal anesthesia, and for the treatment of shock associated with trauma, septicemia, infectious diseases, and adverse reactions to medication. Most authorities also agree that a drug, such as metaraminol bitartrate, which exerts both a mildly positive inotropic effect on the heart and a moderate peripheral vasoconstriction without a tendency toward cardiac arrhythmias, is useful for the adjunctive management of shock accompanying myocardial infarction. In moderate hypotension secondary to hemorrhage, cautious administration of metaraminol bitartrate may be of value as a temporary expedient before blood and fluid replacements are available, or as adjunctive therapy in those patients who do not obtain a prompt and adequate response to blood and parenteral fluids. Although metaraminol does not appear to induce cardiac arrhythmias, its use should generally be avoided during cyclopropane anesthesia. As with all agents causing peripheral vasconstriction, metaraminol bitartrate should be administered cautiously to all patients with heart and thyroid disease, hypertension, or diabetes.

For systemic use as a vasopressor agent, the route of parenteral administration and dosage will vary according to the urgency of the situation and the needs of the individual patient. As a general guide, doses of 2 to 10 mg. (0.2 to 1 cc. of a sterile solution containing 10 mg. per cubic centimeter) may be injected subcutaneously or intramuscularly. For more rapid effects, metaraminol bitartrate may be administered by intravenous infusion. For this purpose, 15 to 100 mg. (1.5 to 10 cc. of a sterile solution containing 10 mg. per cubic centimeter) is diluted with 500 cc. of isotonic sodium chloride solution or 5% dextrose in water for injection and administered by continuous intravenous drip at a rate adjusted to maintain pressure. In severe shock, when time is of great importance, 0.5 to 5 mg. (0.05 to 0.5 cc. of a sterile solution containing 10 mg. per cubic centimeter) of the drug may be administered by direct intravenous injection. This method of administration should be employed only in instances of grave emergency, and extreme care must be given to proper dosage.

With the prolonged duration of action of metaraminol bitartrate, there is the possibility of a cumulative effect. If an excessive vasopressor response is obtained, the blood pressure may not drop rapidly enough when therapy is discontinued. As the maximum effect of metaraminol bitartrate is not immediately apparent, at least 10 minutes should elapse before the dosage is increased.

The Council voted to expand the monograph in New and Nonofficial Drugs to describe the parenteral use of metaraminol bitartrate as a vasopressor agent in acute hypotensive states.

Merck Sharp & Dohme Research Laboratories, Division of Merck & Co., Inc., cooperated by furnishing scientific data to aid in the evaluation of this additional use of metaraminol bitartrate.

Willingness and Desire to Work.—I would place first among the requisites of an investigator the willingness and the desire to work. No amount of brilliance or good fortune relieves one of the necessity of hard work. Even the brilliant accidental observation has to pass rigorous tests before it is proved and accepted. I cannot refrain from quoting some of Sir William Osler's comments about the master word work: "It is the open sesame to every portal, the great equalizer in the world, the true philosopher's stone, which transmutes all the base metal of humanity in gold. The stupid among you it will make bright, the bright man brilliant, and the brilliant student steady. With the magic word in your heart all things are possible, and without it all study is vanity and vexation." The keen observer who is willing to work will likely make important, even if not monumental, discoveries and in so doing he will have a great deal of pleasure. I agree with Henderson that the important contributor to advances in medicine will experience the contentment that comes from work well done, the pleasure of masterly performance, the satisfaction that comes from aiding the sick and stimulating others in the same endeavor, the appreciation of the value of science for its own sake, the answer to his curiosity, and the exhilaration that comes at the conclusion of the hunt or the chase. He will be unlike the lazy medical student described by Sigmund Freud in the "Interpretation of Dreams" who, to save himself the trouble of getting up, dreamed he was already at work in the hospital.—A. Blalock, M.D., The Nature of Discovery, *Annals of Surgery*, September, 1956.

MEDICINE AT WORK

INVESTMENT IN KNOWLEDGE

They needed a new slide projector at the University of Minnesota Medical School in order to really do a bang-up job of teaching histology and other lecture courses. Along came a "ripple," and the dean reached out for it.

They needed some extra cash for small salary increases to keep several young instructors at the University of Texas medical branch. Along came a ripple for the dean. Another ripple helped a medical college dean in California to meet the many emergencies that arise in teaching, in laboratory equipment, and in a variety of facilities. The ripples are spreading out all across the nation—helping train tens of thousands of graduate physicians and undergraduate medical students, helping serve short refresher courses to hospital staff members and family doctors, and taking part in the multi-million-dollar research projects which give birth to medical progress.

The ripples are made whenever a dollar is dropped, like a raindrop, into the American Medical Education Foundation fund. These donations are going fully and directly to the 82 medical schools in the United States. No part of the money is split off for administrative expenses, since the sponsoring American Medical Association foots the bill for operations. And the grants are completely unrestricted—for whatever medical school use the dean sees fit; this means no strings attached to the freedom of medical education.

Medical Education Is Many Things

As the second annual observance of Medical Education Week begins tomorrow, the nation's medical schools are shown in their multiple function: clusters of classrooms and laboratories; seats of postgraduate learning; the major source of training for such medical ancillary personnel as nurses, special therapists, technologists, and dietitians; living workshops for serving and studying sick people. Much of this is underwritten by donations of doctors.

An urgent need for some kind of underwriting became full blown shortly after World War II as the mounting cost of medical education threatened to jeopardize the entire future of the profession. Unknown to each other, two groups began tackling the mammoth problem in 1948. One was a group of medical and industrial leaders. At the nucleus of the other group were President Conant of Harvard and General Eisenhower of Columbia. When the two groups learned of each other's activities, they combined effort. First to be formed was the National Fund for Medical Education, which was to concentrate its money-raising efforts on industry and philanthropic groups. Then the American Medical Education Foundation was formed under the auspices (and a $500,000 seed grant) of the A. M. A. to seek financial aid from members of the medical profession.

In the past five and a half years, through their medical societies and individually, American physicians have given 6 million dollars to the A. M. E. F. They have done this not only in loyalty to their alma mater but also to help keep the schools operating as independent institutions. Toward this same end, the Ford Foundation has granted or earmarked 100 million dollars to strengthen medical school instruction. Last year, while over 1,700 corporations allocated nearly 2 million dollars in unrestricted gifts to medical schools, thousands of physicians gave over 1 million dollars through the A. M. E. F.

Left, largest lump sum ever contributed to American Medical Education Foundation—$164,940—was presented before the House of Delegates in Chicago last June by Dr. F. Lee Stone (left), president of the Illinois State Medical Society, and Dr. Harold M. Camp, society secretary, to Dr. Louis H. Bauer (right), president of the foundation. *Right,* A. M. A. Trustee E. S. Hamilton presents a certificate of merit to the late Dr. Louis D. McGuire of Omaha (right), who barnstormed the Midwest in an airplane to raise funds for A. M. E. F.

Another 2 million dollars went to medical schools via alumni associations, several of which (including those of the University of Colorado and Georgetown University in Washington, D. C.) work with the A. M. E. F. in their drive for alumni funds.

The Rising Need

But in spite of all these presentations, despite the fact that medical schools are better supported today than at any time in history, operating costs continue to skyrocket. The fact remains that no other form of higher education is so expensive as medical education. By its very nature in a growingly complex world, more extensive and more intensive medical education is soaking up the ripples of aid.

Merely to maintain the present physician-patient ratio will cost an additional 1 billion dollars in the next 18 years. That is the estimate of Dr. Vernon W. Lippard of the Yale University School of Medicine. He says that by 1975 all existing medical schools will have to be expanded, and at least 25 more new ones built—simply to produce the 2,000 more physicians who will be needed annually by then for a growing population.

Meanwhile, a typical medical school today can count on less than one out of every five budget dollars to come from tuition. The rest must be drawn out of endowments, gifts—or the U. S. treasury. Every effort is being made to avoid resorting to federal financing—lest government aid lead to the sort of uniformity of medical education that stifles research, coerces the high-level teaching concepts of individual schools, and turns private medicine into an expensive federal bureaucracy.

One way to minimize the danger of governmental control is to obtain more of a contribution from private industry. Dr. Willard C. Rappleye, dean of the Columbia University Faculty of Medicine, points out, for example, that, if American corporations last year donated only one-fortieth of one percent of their net profits before taxes, this sum would underwrite the present deficits of all medical schools in the nation.

But industry's role is dependent upon professional leadership. There is continued need for a doctor's personal identification with a vast effort touching upon the graduate as well as the student, the future as well as the present, the patient at large as well as the physician personally. The discerning physician knows that only by leading with his own support and that of other members of his profession can he expect adequate support from nonmedical groups and individuals.

During the past five and a half years, human effort has matched cold cash for the A. M. E. F. A campaign in St. Paul drew donations from 50% of the medical society membership (three times the normal for a voluntary campaign). The A. M. A. woman's auxiliary in Garden City, N. Y., sold Christmas cards to bolster the fund. The Indiana State Medical Association collected $50,000 on the spot when the hat was passed at one annual meeting—and doctors' wives in Indiana did some selling of hats to raise even more money for the A. M. E. F. In Hartford, Conn., medical education benefited by a campaign to give memorial fund donations to the A. M. E. F. in lieu of flowers at funeral services for physicians.

Barnstorming Campaigner

Probably the most dramatic campaign in any state was conducted by the late Dr. Louis D. McGuire, who took a month off from his practice in Omaha so he could rent an airplane and barnstorm Nebraska in a successful drive for A. M. E. F. contributions. Many of his pledges were for $1,000 apiece. Dr. McGuire, one of the first active state chairmen for A. M. E. F., was awarded a certificate of merit by the foundation's board of directors. He died in 1954.

All this community effort among physicians attests to the grass-roots interest in keeping medical schools as free as possible from the potential control that accompanies federal subsidy. But it signifies more than that. It is a sign—an offered dollar sign, if you will—of the profession's concern not only for the doctors of tomorrow but also for the medical graduates of yesterday. A growing number of physicians are now realizing the extent to which A. M. E. F. contributions are helping to finance their own postgraduate education. To them, the contention that donations are paying off some of the subsidy of their own undergraduate medical education is not cogent enough.

The money, in fact, is helping finance their same medical school today—and tomorrow—as the school educates physicians through journals, forums, and other mediums of communication. "Tuition" is payable by way of individual conscience. Says A. M. A. President Dwight H. Murray: "I personally do not like to consider contributions to the Foundation as a payment of a debt owed. I prefer to consider them as a demonstration of the interests of the profession in the high standards of medical education and high standards of medical care for the American public."

Money for A. M. E. F., as thousands of contributors already know, emphasizes Benjamin Franklin's thesis that "an investment in knowledge pays the best interest."

Amebiasis of the Lung.—Pleuropulmonary amebiasis may be manifest without diarrhea or dysentery. In obscure lesions of the right lower lung field, one should always consider pleuropulmonary amebiasis—especially with low grade fever and moderate leukocytosis. Abscess and empyema contents should be examined promptly microscopically or kept warm to preserve the motility of the trophozoites until satisfactory examination is possible. Conservative therapy will successfully manage most cases of pleuropulmonary amebiasis. If a thorough search fails to reveal Entameba histolytica, and the diagnosis is still entertained, a medical therapeutic trial is in order.—A. C. Daniels, M.D., and M. E. Childress, M.D., Pleuropulmonary Amebiasis, *California Medicine*, December, 1956.

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THE POSTGASTRECTOMY SYNDROMES

GUEST EDITORIAL

George L. Jordan Jr., M.D.

About 85% of patients treated for the complications of duodenal ulcer by subtotal gastrectomy may be classified as having good or excellent results, but the remaining 15% fail to improve significantly. Most of the poor results following this operation are not due to recurrence of ulcer disease but are due to the altered anatomy and physiology produced by the operative procedure. "Dumping syndrome" has often been used as an inclusive term to refer to all types of symptoms that may occur after gastrectomy. At the present time, however, it is possible to differentiate several postgastrectomy syndromes so that a careful evaluation of the patient with symptoms will lead to a more specific diagnosis that will allow a rational approach to therapy.

The most common syndrome, which occurs in 15 to 40% of all patients treated, is characterized by postprandial weakness, sweating, pallor, increased pulse rate, nausea, vomiting, and diarrhea. Symptoms appear during the meal or within 10 to 20 minutes after its ingestion and last 20 to 60 minutes, subsiding spontaneously. This difficulty is produced by the passage of undigested food into the jejunum, where its high osmotic pressure causes a rapid influx of fluid into the small intestine. The presence of fluid in the jejunum stimulates hypermotility, and nausea, vomiting, and diarrhea may occur. The fluid comes from the blood stream and, therefore, an acute fall in blood volume results; it is this sudden decrease in blood volume that is responsible for the vasomotor symptoms. This syndrome can be diagnosed objectively by serial determinations of blood volume, as described by Roberts and co-workers,[1] as well as by characteristic electrocardiographic changes that may be recorded simultaneously with the alteration in blood volume. Furthermore, studies of gastrointestinal motility will usually reveal a hypermotility in the postprandial period. It is possible that alterations in the serum concentration of potassium may contribute to the production of symptoms in some persons, though the evidence for this theory is less concrete. Proteins are less likely to produce symptoms than other foods; consequently, many patients are relieved when a high-protein, low-carbohydrate diet, taken as six small feedings, is prescribed. Liquids should be taken only between meals. In many patients symptoms can be prevented by the patient's lying down immediately after eating. Others respond well to the administration of antispasmodic agents such as hexamethonium or piperidolate (Dactil) hydrochloride. If the blood volume is low, restoration to normal may aid in treatment.

Another syndrome, wherein the symptoms resemble those described above, occurs in the late postprandial period, usually two to four hours after a meal. This "late postgastrectomy syndrome" is the result of a rebound hypoglycemia, and the diagnosis can be confirmed by a determination of the blood glucose level. It is relieved by the ingestion of food, and it can be prevented by the same dietary regimen that would be prescribed for any patient with hypoglycemia.

In some patients symptoms result from the fact that the stomach remnant is small; thus, the ingestion of a meal as large as that usually consumed prior to surgery may produce a discomfort similar to that which a normal person experiences after the ingestion of a large Thanksgiving dinner. These symptoms may be readily controlled by limiting the total food intake at any one time, but it may be necessary to eat several meals daily in order to maintain adequate nutrition without producing symptoms.

Another group suffers from chronic obstruction of the afferent loop. The complaints are those of nausea and vomiting postprandially; vasomotor symptoms are minimal or absent. The vomitus consists of large quantities of bile-stained fluid without food, and, when vomiting occurs, symptoms are relieved. The diagnosis should be suspected if it is impossible to fill the afferent loop with barium during a roentgenographic examination of the upper gastrointestinal tract, and the diagnosis can be verified by aspiration of jejunal contents in the postprandial period, for there is absence of bile during the symptomatic period, and it is possible to correlate the appearance of bile with the relief of symptoms. The pathogenesis of this syndrome is mechanical obstruction of the afferent loop due to adhesions, volvulus, or herniation under the efferent loop. Treatment consists of surgical relief of the obstruction.

Obstructions of the efferent loop also occur, causing nausea and vomiting, but the vomitus contains recently ingested food, and the diagnosis can be confirmed

From the Cora and Webb Mading Department of Surgery, Baylor University College of Medicine, Houston, Texas.

1. Roberts, K. E.; Randall, H. T.; Farr, H. W.; and Kidwell, A. P.: Cardiovascular and Blood Volume Alterations Resulting from Intrajejunal Administration of Hypertonic Solutions to Gastrectomized Patients: Relationship of These Changes to Dumping Syndrome, Ann. Surg. **140:**631-640 (Nov.) 1954.

by roentgenographic examination after the ingestion of barium. Surgical intervention offers the only hope of relief.

Most patients who suffer from malnutrition in the postprandial period have some difficulty with the ingestion of food resulting from one of the syndromes noted above, and malnutrition is easily corrected if symptoms are relieved. There remains, however, a group of patients who have difficulty with absorption, without associated postprandial symptoms. Thus the anemias that occur are usually iron-deficiency anemias and can be corrected by oral administration of a preparation that is easily absorbed, or, in severe cases, by the intravenous administration of iron. True pernicious anemia, requiring therapy with vitamin B_{12} or liver, is very uncommon after subtotal gastric resection.

It has been common practice among many physicians to attribute a large percentage of postgastrectomy symptoms to psychological factors. It is true that the psychoneurotic patient who experiences any of the syndromes noted above is more likely to be incapacitated than the stoic person who seldom complains. Furthermore, it is true that there are some patients whose symptomatology arises solely on a psychological basis, and on occasion it may be difficult to elucidate the exact cause of the symptoms. There is, however, ample evidence to indicate that most patients have symptoms arising from alterations in anatomy or physiology as a result of the operation, and the taking of a detailed history, the making of a complete physical examination, and the use of laboratory procedures will usually allow proper interpretation.

The number of patients whose symptoms cannot be improved by proper therapy is extremely small. Consequently, it is often possible to convert a person with an initial poor result into an asymptomatic, grateful patient.

FATS, CHOLESTEROL, AND ATHEROSCLEROSIS

To help the family doctor answer his patients' queries concerning fats in the diet, the American Medical Association's Council on Foods and Nutrition last month held a symposium to sum up present knowledge on the subject. The one definitive conclusion that resulted from this investigative meeting is that quite a bit more study concerning dietary fats will have to be done before the average American's eating habits are to be drastically altered.

What the meeting in New Orleans did do, in addition to crystallizing present thought, was to provide promising areas for future work in the role of dietary fats, especially as related to heart disease. One of the many significant contributions to the symposium was a report that evidenced, for the first time, the production of myocardial infarction in a significant percentage of rats in a study. By using the combined technique of feeding high quantities of saturated fats and supplementing the diet with cholesterol, cholic acid, and thiouracil, Dr. W. Stanley Hartcroft, of St. Louis, has opened further paths to evaluating the relative importance of the various factors initiating atheroma with respect to its role in the fatal myocardial accident. It was, however, frankly admitted that it is still not possible to state with certainty whether the lipid deposits of the plaque are primary initiating agents or secondary sequelae in the pathogenesis of the lesion. The only lipid constituent of arterial plaques that differs from the lipid circulating in the plasma is ceroid, a fat-like deposit regularly found in atheromatous lesions in man. This same substance, not soluble in conventional fat solvents, has also been found deposited in the thrombi of experimentally induced myocardial infarcts.

Considerable emphasis was given to the effect of corn oil and certain other fats containing unsaturated fatty acids that reduce blood cholesterol levels. It was reiterated by most speakers that, whereas corn oil is indeed effective in most cases of hypercholesteremia, fats containing the unsaturated fatty acid linoleic acid (of which corn oil is just one) are not the only agents that are effective.

It will be of interest to the medical profession that, despite the seeming confusion in the field of dietary fats and their possible resultant pathology, the participants and the discussants in the symposium agreed in the majority of facts that were presented. While it was considered that it is still premature to directly relate diet and coronary artery disease, the point was brought out that the quantity as well as the quality of the fat in the diet is important in the etiology of hypercholesteremia. Adults who are not overweight, who are without any familial history of early death from heart disease, and who have relatively low levels of serum cholesterol (in the range of 175 to 225 mg. per 100 cc.) need make no change in their diet. Obese persons with cholesterol levels that are not elevated might do well to reduce, but at the present time this is the only diet modification that can be recommended for such persons. Individuals with consistently elevated cholesterol levels would have somewhat more reason to attempt to lower their level of circulating blood cholesterol, particularly if there is a family history of early death from cardiovascular disease.

It is planned to publish the papers from this symposium in a future issue of THE JOURNAL, and eventually these papers, with the discussions that followed their presentation, will be available in monograph form as a publication of the Council on Foods and Nutrition. Until doctors have an opportunity to review the wealth of information offered by the symposium, it might be best to approach the problem of reduced total fat intake with a proportionate increase of unsaturated fats, keeping in mind the caloric value of all the foods. Again this specific dietary measure should be utilized only when it is desirable to reduce the cholesterol and lipoprotein levels in the blood.

WELCOME TO NEW YORK

The coming Annual Meeting on June 3-7 will be the seventh time the American Medical Association has met in New York City in the 110 years of its existence, the last meeting having been held there only four years ago. Since that meeting the New York Coliseum, specifically designed for meetings and conventions, has been completed.

The Coliseum

The Coliseum is located on Columbus Circle in the center of the city, at the point from which all distances to and from New York are measured. Dozens of hotels are within a few blocks of the Coliseum and five major hotels can be reached by subway from this building without going out of doors. The Coliseum is five minutes from Times Square, seven minutes from the Pennsylvania Station, and nine minutes from Grand Central. In this building will be held some of the scientific and all of the commercial exhibits, colored television, and several section meetings during the Annual Session of the American Medical Association. All of the public space in the Coliseum is air-conditioned. Nine elevators carry visitors to the second, third, and fourth floors from the lobby. Three escalators lead from the lobby to the second exhibition floor, and two additional escalators at the south end of the lobby are capable of carrying thousands of persons per hour to the third floor. The new Coliseum also has a public address system, which will beam messages or speeches wherever wanted and pick up any section of the building. Temporary auditorium seating can be provided for as many as 8,000 persons.

The Coliseum

Where Visitors May Obtain Information

More than 11 million people live and work within the metropolitan area in New York: more Irishmen than in Dublin, more Jews than in Palestine, and more persons of Italian birth than in Venice, most of whom have been educated to American ideals and customs. There are 20 newspapers published in different languages in this area. Numerous places of historical, professional, and cultural interest are found within and closely beyond New York City, and visitors will gladly be given directions to these places at the Information Center of the New York Convention and Visitors' Bureau, 500 Park Ave., and at the Police Information Booth on Times Square. The New York Convention and Visitors' Bureau, Pershing Square, 90 E. 42nd St. (Murray Hill 7-1300), issues a pamphlet called "Visitors' Guide to New York," in which are a map and brief descriptions of dozens of places of interest.

Tall Buildings

New York City has 500 buildings of 20 or more floors in height and 215 buildings ranging from 25 to 102 floors in height. The Empire State Building at Fifth Avenue and 34th Street, the tallest building in the world, rises 1,250 ft. above the street level. The Chrysler Building on Lexington Avenue and 42nd Street is 1,045 ft. high. The Rockefeller Center at Fifth Avenue between 48th and 51st Streets is a city in itself, containing 15 buildings on more than 12 acres. Within the Center is the 70-story RCA Building, whose slim beauty rises as the central theme of this development. Guided tours of the Center depart daily at frequent intervals visiting, among other points of interest, the lobby of the world's largest indoor theater, Radio City Music Hall, and the observation roof, 850 ft. above Manhattan, from where on clear days one may see for 50 miles in every direction.

United Nations Buildings

The United Nations buildings, illustrated on page 1490 of this issue of THE JOURNAL, occupy 18 acres between 42nd and 48th streets, and First Avenue and the East River. Tickets to meetings of the United Nations are available, free of charge, and are required for attendance at the plenary sessions or committee meetings. Reservations should be made in advance at the Admissions Office, United Nations, New York, or by telephone the day before to Plaza 4-1234, ext. 634. Guided tours of the United Nations headquarters are available daily.

Tunnels and Bridges

Morning and night, millions of workers and visitors enter and leave Manhattan through tunnels under and bridges over the Hudson and the East Rivers. Lincoln Tunnel is under the Hudson River from West 38th Street in Manhattan and leads to Weehawken, N. J., and to the New Jersey Turnpike; Brooklyn-Battery Tunnel runs underneath the East River between the lower end of Manhattan Avenue in Brooklyn and is the second longest vehicular tunnel in the world; and the Holland Tunnel runs underneath the Hudson River from Canal Street to Jersey City, making direct connections with the New Jersey Turnpike.

The beautiful George Washington Bridge spans the Hudson River from West 179th Street to Fort Lee, N. J., connecting with the New Jersey Turnpike and other highways. It is the second longest suspension bridge in the world. Triborough Bridge, a unique structure, connects three borroughs, Manhattan at east 125th Street, the Bronx, and Queens. The Brooklyn Bridge at Park Row and City Hall Park, which crosses the East River to Brooklyn, was opened in 1883.

Museums

The Metropolitan Museum of Art at 15th Avenue and 82nd Street has collections covering 5 million years and ranging geographically through Egypt, Babylon, Asyria, Greece, Rome, the Near and Far East, and Europe from early Christian times to the present.

The American Museum of Natural History, Central Park West, 77th to 81st streets, has an interesting collection illustrating the growth and development of man and one of the world's finest collections containing reassembled skeletons of prehistoric animals.

The Museum of the American Indian–Heye Foundation at Broadway and 155th Street is devoted solely to the collection and preservation of the culture of the American Indian.

The Theodore Roosevelt Museum at 28 E. 20th St., the birthplace of Theodore Roosevelt, contains items related to him.

The Zoological Gardens in Bronx Park at East 182nd Street has a collection of some 2,500 animals, considered the best of its kind in existence. Among others are also the Spanish Museum at 155th Street and Broadway; the Whitney Museum of American Art at 22 W. 54th St.; the Museum of Modern Art at 11 W. 53rd St.; and the Jewish Museum at 5th Avenue and 90th Street.

Institutions of Higher Learning

New York City has five medical schools, 13 universities and general colleges, and several schools of theology and law. New York University, with something like 65 thousand students, is the largest university, and Columbia University, with about 41 thousand students, is the second largest. The College of the City of New York and Hunter College are city-supported. There are also Fordham University, Hunter College, Manhattan College, and a host of musical, professional, technical, business, proprietary, and private institutions. The city maintains some 47 senior high schools, 22 evening high schools, and 10 evening trade schools.

Hospitals

The Columbia-Presbyterian Medical Center at Broadway and 168th Street comprises a group of hospitals. The Presbyterian Hospital is a corporate title for the Presbyterian Hospital, the New York Orthopedic Hospital, Sloane Hospital for Women, the Babies' Hospital, the Institute of Ophthalmology, and the Neurological Institute.

The New York Hospital–Cornell Medical Center on York Avenue between 68th and 71st streets, one of the city's architectural beauties, is illustrated on page 1489 of this issue of THE JOURNAL.

As of recent date, there were 47,475 beds in the 170 hospitals and related facilities in the city, not including hospitals operated under state or federal control. The municipal hospitals provide 38% of the total beds; the voluntary hospitals somewhat more than half of the total beds; and the proprietary hospitals about 11% of the beds for general care. The hospital ambulance service is extensive. All of the ambulances operated by the municipal and the voluntary hospitals are supervised by the City Department of Hospitals. The city pays to the voluntary hospitals a stipulated sum per ambulance per year.

Theatrical Productions

Some of the theatrical productions that are expected to be running at the time of the American Medical Association Annual Meeting are My Fair Lady at the Mark Hellinger Theater, 51st Street west of Broadway; Ziegfeld's Follies at the Winter Garden, 51st and Broadway; Auntie Mame at the Broadhurst Theater, 41st Street west of Broadway; Li'l Abner at the St. James Theater, 44th Street west of Broadway; Happy Hunting at the Majestic Theater, 44th Street, west of Broadway; Long Day's Journey into Night at the Helen Hayes Theater, 45th Street west of Broadway; Bells Are Ringing at the Shubert Theater, 44th Street west of Broadway; Diary of Anne Frank at the Ambassador Theater, 215 W. 49th St.; Holiday for Lovers at the Longacre Theater, 48th Street west of Broadway; Inherit the Wind at the National Theater, 41st Street west of Broadway; and Major Barbara at the Morosco Theater, 45th Street west of Broadway. The Radio City Music Hall will have a first-run movie and the famous Rockettes.

Shopping and Eating Places

New York City is unsurpassed in the number and quality of its large and small stores and in the places to eat any kind of food that the visitor desires. For a free copy of the shopping guide and for a restaurant and night club folder, write or visit the Official Visitor Information Center, New York Convention and Visitors' Bureau, Pershing Square, 90 E. 42nd St.

After the Meeting

When the Annual Meeting of the American Medical Association is over, those who desire to tour in the East or to take a vacation will find good roads out of the city in every direction. West Point, up the Hudson River, is not far away, nor the Adirondack Mountains, nor is beautiful and historical New England and other historical places to the north, south, and west. The Annual Meeting not only affords an exceptional opportunity for professional advancement but also can be the beginning of a wonderful vacation.

Above, New York Hospital—Cornell Medical Center, 68th and East River.

Above left, the Statue of Liberty at the head of Upper New York Bay.

Below, Columbia—Presbyterian Medical Center.

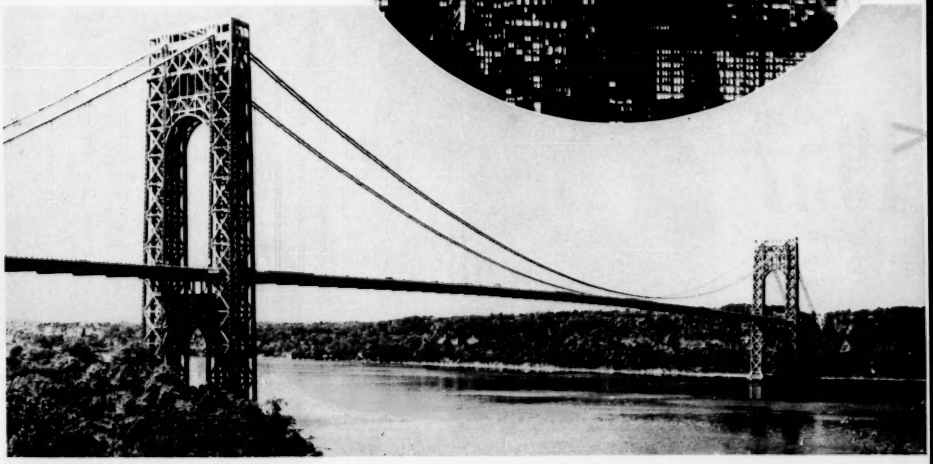
1957

Right, view from East River of United Nations buildings, showing 39-story Secretariat and General Assembly buildings.

Empire State Building—the tallest in the world, 1,472 ft. high.

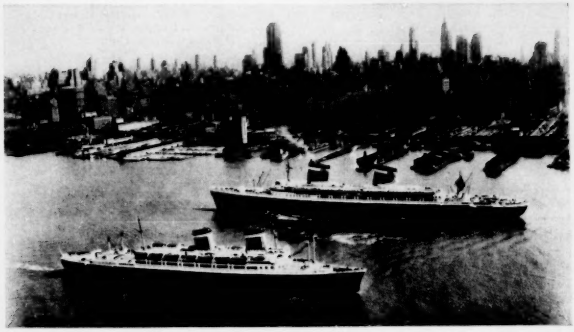
Right, night view of Empire State Building, taken from the RCA Building further uptown.

Below: George Washington Bridge spanning the Hudson River from New York to New Jersey.



City Hall, housing offices of the mayor, the city council, and the board of estimate. A museum on the second floor contains a mahogany writing table used by George Washington during the first days of his presidency.

Below, the S. S. America (foreground) moves down the Hudson River headed out to sea; her sister ship, the S. S. United States, steams up the river after crossing the Atlantic from Europe.



Right, the new Coliseum on Columbus Circle at the exact center of New York City and within a few blocks from many hotels.

Below, night view of downtown skyline as it appears from across the bay on Governors Island.

THE NEW YORK MEETING

AMERICAN MEDICAL ASSOCIATION, ONE HUNDRED AND SIXTH ANNUAL MEETING NEW YORK, JUNE 3-7, 1957

OFFICIAL CALL

To the Officers and Members of the American Medical Association

The 106th Annual Meeting of the American Medical Association will be held in New York, June 3-7, 1957.

The House of Delegates will convene at 10 a. m. Monday, June 3. In the House the representation of the various constituent associations for 1957 is as follows:

Alabama	2	Montana	1
Alaska	1	Nebraska	2
Arizona	1	Nevada	1
Arkansas	2	New Hampshire	1
California	15	New Jersey	6
Colorado	2	New Mexico	1
Connecticut	3	New York	18
Delaware	1	North Carolina	3
District of Columbia	2	North Dakota	1
Florida	3	Ohio	8
Georgia	3	Oklahoma	2
Hawaii	1	Oregon	2
Idaho	1	Pennsylvania	11
Illinois	10	Puerto Rico	1
Indiana	4	Rhode Island	1
Iowa	3	South Carolina	2
Isthmian Canal Zone	1	South Dakota	1
Kansas	2	Tennessee	3
Kentucky	2	Texas	7
Louisiana	2	Utah	1
Maine	1	Vermont	1
Maryland	2	Virginia	3
Massachusetts	6	Washington	3
Michigan	6	West Virginia	2
Minnesota	4	Wisconsin	4
Mississippi	2	Wyoming	1
Missouri	4		

The scientific sections of the American Medical Association, the Medical Corps of the Army, the Medical Corps of the Navy, the Medical Corps of the Air Force, the Public Health Service, and the Veterans Administration are entitled to one delegate each.

The Scientific Assembly of the Association will open with the General Scientific Meetings to be held Monday, June 3, starting at 9 a. m. in the morning and at 2 p. m. in the afternoon.

The Inaugural Ceremony, at which the President will be installed, will be held on Tuesday evening, June 4.

Sections of the Scientific Assembly will meet Tuesday, June 4, beginning at noon; all day Wednesday and Thursday, June 5 and 6; and on Friday morning, June 7, as follows:

CONVENING AT 9 A. M. THE SECTIONS ON	CONVENING AT 2 P. M. THE SECTIONS ON
Anesthesiology	Diseases of the Chest
Dermatology	Experimental Medicine and Therapeutics
Gastroenterology and Proctology	General Practice
Internal Medicine	Laryngology, Otology and Rhinology
Obstetrics and Gynecology	Military Medicine
Ophthalmology	Nervous and Mental Diseases
Orthopedic Surgery	Pediatrics
Pathology and Physiology	Radiology
Physical Medicine	Surgery, General and Abdominal
Preventive Medicine	Miscellaneous Topics: Sessions on Allergy, Legal Medicine, and Medical Communication
Urology	

The Registration Bureau, which will be located in the entrance lobby of the New York Coliseum, will be open from 12 noon to 4 p. m., Sunday, June 2; from 8 a. m. to 5:30 p. m. Monday, June 3; from 8:30 a. m. to 5:30 p. m. Tuesday, Wednesday and Thursday, June 4, 5 and 6; and from 8:30 a. m. to 12 noon Friday, June 7.

DWIGHT H. MURRAY, President.
E. VINCENT ASKEY, Speaker, House of Delegates.
GEORGE F. LULL, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete. Following is a list of the holdover members of the House of Delegates and of the newly elected members who have been reported to the Secretary in time to be included:

DELEGATES FROM CONSTITUENT ASSOCIATIONS

ALABAMA
J. Paul Jones, Camden
E. Bryce Robinson Jr., Fairfield

ALASKA
Milo H. Fritz, Anchorage

ARIZONA
Jesse D. Hamer, Phoenix

ARKANSAS
James M. Kolb, Clarksville
Rufus B. Robins, Camden

CALIFORNIA
Lewis A. Alesen, Los Angeles
E. Vincent Askey, Los Angeles
Cyril J. Attwood, Oakland
Donald Cass, Los Angeles
Paul D. Foster, Los Angeles
Leopold H. Fraser, Richmond
John Winston Green, Vallejo
Eugene F. Hoffman, Los Angeles
R. Stanley Kneeshaw, San Jose
J. Lafe Ludwig, Los Angeles
Frank A. MacDonald, Sacramento
Sam J. McClendon, San Diego
Robertson Ward, San Francisco
Dwight L. Wilbur, San Francisco

COLORADO
Edward E. H. Munro, Grand Junction
Kenneth C. Sawyer, Denver

CONNECTICUT
Thomas J. Danaher, Torrington
John N. Gallivan, East Hartford
Stanley B. Weld, Hartford

DELAWARE
H. Thomas McGuire, New Castle

DISTRICT OF COLUMBIA
Victor R. Alfaro, Washington
Raymond T. Holden, Washington

FLORIDA
Reuben B. Chrisman Jr., Coral Gables
Francis T. Holland, Tallahassee
Louis M. Orr, Orlando

GEORGIA
Eustace A. Allen, Atlanta
Spencer A. Kirkland, Atlanta
Charles H. Richardson, Macon

HAWAII
Harry L. Arnold Jr., Honolulu

IDAHO
Hoyt B. Woolley, Idaho Falls

ILLINOIS
Walter C. Bornemeier, Chicago
Everett P. Coleman, Canton
Harlan English, Danville
Warren W. Furey, Chicago
Percy E. Hopkins, Chicago
B. E. Montgomery, Harrisburg
J. Mather Pfeiffenberger, Alton
H. Kenneth Scatliff, Chicago
Carl Steinhoff, Chicago
C. Paul White, Kewanee

INDIANA
Eli S. Jones, Hammond
Cleon A. Nafe, Indianapolis
Wendell C. Stover, Boonville
Gordon B. Wilder, Anderson

IOWA
Francis C. Coleman, Des Moines
Robert N. Larimer, Sioux City
Donovan F. Ward, Dubuque

KANSAS
George F. Gsell, Wichita
L. R. Pyle, Topeka

KENTUCKY
Clark Bailey, Harlan
W. Vinson Pierce, Covington

LOUISIANA
James Q. Graves, Monroe
Philip H. Jones, New Orleans

MAINE
Philip P. Thompson Jr., Portland

MARYLAND
Warde B. Allan, Baltimore
Robert vanLieu Campbell, Hagerstown

MASSACHUSETTS
Lawrence R. Dame, Greenfield
Philip S. Foisie, Milton
Charles G. Hayden, Boston
Henry F. Howe, Cohasset
Nicholas S. Scarcello, Worcester
Norman A. Welch, Boston

MICHIGAN
Wyman D. Barrett, Detroit
John S. DeTar, Milan
Willis H. Huron, Iron Mountain
William A. Hyland, Grand Rapids
Robert L. Novy, Detroit
Clarence I. Owen, Detroit

MINNESOTA
J. Arnold Bargen, Rochester
Orwood J. Campbell, Minneapolis
George A. Earl, St. Paul
Frank J. Elias, Duluth

MISSISSIPPI
John P. Culpepper Jr., Hattiesburg
John F. Lucas, Greenwood

MISSOURI
Frank L. Feierabend, Kansas City
Durward G. Hall, Springfield
Joseph C. Peden Sr., St. Louis
H. E. Petersen, St. Joseph

MONTANA
Raymond F. Peterson, Butte

NEBRASKA
Earl F. Leininger, McCook
Joseph D. McCarthy, Omaha

NEVADA
Wesley W. Hall, Reno

NEW HAMPSHIRE
Louis C. Theobald, Exeter

NEW JERSEY
C. Byron Blaisdell, Asbury Park
William F. Costello, Dover
Aldrich C. Crowe, Ocean City
J. Wallace Hurff, Newark
L. Samuel Sica, Trenton
Elmer P. Weigel, Plainfield

NEW MEXICO
H. Linton January, Albuquerque

NEW YORK
A. H. Aaron, Buffalo
Walter P. Anderton, New York
R. J. Azzari, Bronx
Peter J. DiNatale, Batavia
Gerald D. Dorman, New York
Edward P. Flood, Bronx
Thurman B. Givan, Brooklyn
James Greenough, Oneonta
Frederic W. Holcomb, Kingston
J. Stanley Kenney, New York
John J. Masterson, Brooklyn
Dan Mellen, Rome
Norman S. Moore, Ithaca
Peter M. Murray, New York
Carlton E. Wertz, Buffalo
Floyd S. Winslow, Rochester
Ezra A. Wolff, Forest Hills
Christopher Wood, White Plains

NORTH CAROLINA
Elias S. Faison, Charlotte
Millard D. Hill, Raleigh
Charles F. Strosnider, Goldsboro

NORTH DAKOTA
Willard A. Wright, Williston

OHIO
Paul A. Davis, Akron
Fred W. Dixon, Cleveland
Charles L. Hudson, Cleveland
Richard L. Meiling, Columbus
Carll S. Mundy, Toledo
L. Howard Schriver, Cincinnati
Clifford C. Sherburne, Columbus
George A. Woodhouse, Pleasant Hill

OKLAHOMA
John F. Burton, Oklahoma City
Wilkie D. Hoover, Tulsa

OREGON
Raymond M. McKeown, Coos Bay
Archie O. Pitman, Hillsboro

PENNSYLVANIA
James Z. Appel, Lancaster
Daniel H. Bee, Indiana
William F. Brennan, Pittsburgh
Gilson Colby Engel, Philadelphia
William L. Estes Jr., Bethlehem
Harold B. Gardner, Harrisburg
Louis W. Jones, Wilkes-Barre
George S. Klump, Williamsport
Thomas W. McCreary, Rochester
Charles L. Shafer, Kingston
Elmer G. Shelley, North East

PUERTO RICO
F. Sánchez-Castaño, Vega Baja

RHODE ISLAND
Charles J. Ashworth, Providence

SOUTH CAROLINA
George D. Johnson, Spartanburg
William Weston Jr., Columbia

SOUTH DAKOTA
Arthur A. Lampert, Rapid City

TENNESSEE
William C. Chaney, Memphis
Charles M. Hamilton, Nashville
Charles C. Smeltzer, Knoxville

TEXAS
Joseph B. Copeland, San Antonio
John K. Glen, Houston
Louis C. Heare, Port Arthur
Milford O. Rouse, Dallas
Troy A. Shafer, Harlingen
Truman C. Terrell, Fort Worth
James H. Wooten Jr., Columbus

UTAH
George M. Fister, Ogden

VERMONT
James P. Hammond, Bennington

VIRGINIA
Vincent W. Archer, Charlottesville
W. Linwood Ball, Richmond
Rufus Brittain, Tazewell

WASHINGTON
M. Shelby Jared, Seattle
Jesse W. Read, Tacoma
Alvia G. Young, Wenatchee

WEST VIRGINIA
Frank J. Holroyd, Princeton
Walter E. Vest, Huntington

WISCONSIN
Stephen E. Gavin, Fond du Lac
Joseph C. Griffith, Milwaukee
William D. Stovall, Madison
Dexter H. Witte, Milwaukee

WYOMING
Albert T. Sudman, Green River

DELEGATES FROM THE SECTIONS AND GOVERNMENT SERVICES

ANESTHESIOLOGY
Edward B. Tuohy, Los Angeles

DERMATOLOGY
Winfred A. Showman, Tulsa, Okla.

DISEASES OF THE CHEST
Hollis E. Johnson, Nashville, Tenn.

EXPERIMENTAL MEDICINE AND THERAPEUTICS
Edgar V. Allen, Rochester, Minn.

GASTROENTEROLOGY AND PROCTOLOGY
Stuart T. Ross, Garden City, N. Y.

GENERAL PRACTICE
Lester D. Bibler, Indianapolis

INTERNAL MEDICINE
Charles T. Stone Sr., Galveston, Texas

LARYNGOLOGY, OTOLOGY AND RHINOLOGY
Gordon F. Harkness, Davenport, Iowa

MILITARY MEDICINE
Charles L. Leedham, Cleveland

NERVOUS AND MENTAL DISEASES
Francis M. Forster, Washington, D. C.

OBSTETRICS AND GYNECOLOGY
Ralph E. Campbell, Madison, Wis.

OPHTHALMOLOGY
Ralph O. Rychener, Memphis, Tenn.

ORTHOPEDIC SURGERY
H. Relton McCarroll, St. Louis

PATHOLOGY AND PHYSIOLOGY
Lall G. Montgomery, Muncie, Ind.

PEDIATRICS
Woodruff L. Crawford, Rockford

PHYSICAL MEDICINE
Frank H. Krusen, Rochester, Minn.

PREVENTIVE MEDICINE
R. T. Johnstone, Los Angeles

RADIOLOGY
Eugene P. Pendergrass, Philadelphia

SURGERY, GENERAL AND ABDOMINAL
Grover C. Penberthy, Detroit

UROLOGY
Jay J. Crane, Los Angeles

UNITED STATES AIR FORCE
Dan C. Ogle

UNITED STATES ARMY
James P. Cooney

UNITED STATES NAVY
Bruce E. Bradley

PUBLIC HEALTH SERVICE
Leroy E. Burney

VETERANS ADMINISTRATION
Roy A. Wolford

There will be present also two student delegates from the Student American Medical Association.

REFERENCE COMMITTEES OF THE HOUSE OF DELEGATES

The Speaker of the House of Delegates Dr. E. Vincent Askey, California, has appointed the following delegates to serve on the reference committees of the House at the New York meeting:

Amendments to the Constitution and Bylaws
CLIFFORD C. SHERBURNE, *Chairman*, Ohio
JAY J. CRANE, Section on Urology
HOYT B. WOOLLEY, Idaho
MILLARD D. HILL, North Carolina
WILLIS H. HURON, Michigan

Board of Trustees and Secretary, Reports of
WYMAN D. BARRETT, *Chairman*, Michigan
J. P. CULPEPPER JR., Mississippi
J. STANLEY KENNEY, New York
CLEON A. NAFE, Indiana
ELMER G. SHELLEY, Pennsylvania

Credentials
R. T. JOHNSTONE, *Chairman*, Section on Preventive Medicine
A. A. LAMPERT, South Dakota
SPENCER A. KIRKLAND, Georgia
JAMES GREENOUGH, New York
EDWARD B. TOUHY, Section on Anesthesiology

Executive Session
MILFORD O. ROUSE, *Chairman*, Texas
VINCENT W. ARCHER, Virginia
L. HOWARD SCHRIVER, Ohio
GEORGE M. FISTER, Utah
DEXTER W. WITTE, Wisconsin

Hygiene, Public Health, and Industrial Health
JOHN N. GALLIVAN, *Chairman*, Connecticut
CYRIL J. ATTWOOD, California
RAYMOND T. HOLDEN, Washington, D. C.
FRANCIS C. COLEMAN, Iowa
HENRY F. HOWE, Massachusetts

Insurance and Medical Service
JAMES P. HAMMOND, *Chairman*, Vermont
WILLIAM F. COSTELLO, New Jersey
RALPH E. CAMPBELL, Section on Obstetrics and Gynecology
THOMAS W. MCCREARY, Pennsylvania
CARLL S. MUNDY, Ohio

Legislation and Public Relations
SAM J. MCCLENDON, *Chairman*, California
PERCY E. HOPKINS, Illinois
R. J. AZZARI, New York
WILLIAM WESTON JR., South Carolina
WOODRUFF L. CRAWFORD, Section on Pediatrics

Medical Education and Hospitals
James Z. Appel, *Chairman*, Pennsylvania
Leroy E. Burney, Public Health Service
R. Stanley Kneeshaw, California
Philip H. Jones, Louisiana
Grover C. Penberthy, Section on Surgery, General and Abdominal

Medical Military Affairs
Wesley W. Hall, *Chairman*, Nevada
Francis T. Holland, Florida
Donovan F. Ward, Iowa
W. Vinson Pierce, Kentucky
Nicholas S. Scarcello, Massachusetts

Miscellaneous Business
Peter J. DiNatale, *Chairman*, New York
J. Arnold Bargen, Minnesota
Durward G. Hall, Missouri
Wilkie D. Hoover, Oklahoma
Elias S. Faison, North Carolina

Reports of Officers
Robert N. Larimier, *Chairman*, Iowa
Troy A. Shafer, Texas
Eugene P. Pendergrass, Section on Radiology
James P. Cooney, United States Army
George F. Gsell, Kansas

Rules and Order of Business
Walter P. Anderton, *Chairman*, New York
Eustace A. Allen, Georgia
Gilson Colby Engel, Pennsylvania
Earl F. Leininger, Nebraska
John K. Glen, Texas

Sections and Section Work
Charles J. Ashworth, *Chairman*, Rhode Island
E. Bryce Robinson Jr., Alabama
Jesse D. Hamer, Arizona
Frank A. MacDonald, California
H. Kenneth Scatliff, Illinois

Tellers
John S. DeTar, *Chairman*, Michigan
Edward E. H. Munro, Colorado
Harry L. Arnold Jr., Hawaii
Walter C. Bornemeier, Illinois
H. Linton January, New Mexico

Sergeants at Arms
H. Thomas McGuire, *Master Sergeant*, Delaware
C. Paul White, Illinois
F. Sánchez-Castaño, Puerto Rico

OFFICERS OF THE AMERICAN MEDICAL ASSOCIATION, 1956-57

President—Dwight H. Murray, Napa, Calif.

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Vice Speaker, House of Delegates—Louis M. Orr, Orlando, Fla.

Editor—Austin Smith, Chicago.

Business Manager—Mr. Thomas R. Gardiner, Chicago.

Board of Trustees—J. R. Reuling, Windemere, Fla., 1957; J. R. McVay, Kansas City, Mo., 1957; E. S. Hamilton, Kankakee, Ill., 1958; G. Gundersen, Chairman, La Crosse, Wis., 1958; H. H. Hussey, Washington, D. C., 1959; F. J. L. Blasingame, Wharton, Texas, 1959; L. W. Larson, Bismarck, N. D., 1960;* T. P. Murdock, Meriden, Conn., 1960; J. P. Price, Florence, S. C., 1961; the President; the President-Elect; and, ex officio, the Vice President, Treasurer, Speaker and Vice Speaker of the House of Delegates.

STANDING COMMITTEES OF THE HOUSE OF DELEGATES

Judicial Council—H. L. Pearson Jr., Chairman, Miami, Fla., 1957; C. A. Woodhouse, Pleasant Hill, Ohio, 1958; J. M. Hutcheson, Richmond, Va., 1959; L. A. Buie, Rochester, Minn., 1960; R. Ward, San Francisco, 1961; G. F. Lull, Secretary, Chicago.

Council on Medical Education and Hospitals—F. D. Murphy, Lawrence, Kan., 1957; H. G. Weiskotten, Chairman, Skaneateles, N.Y., 1957; V. Johnson, Rochester, Minn., 1958; L. S. McKittrick, Brookline, Mass., 1958; C. T. Stone Sr., Galveston, Texas, 1959; W. A. Bunten, Cheyenne, Wyo., 1959; J. M. Faulkner, Cambridge, Mass., 1960; H. English, Danville, Ill., 1960; G. A. Caldwell, New Orleans, 1961; J. W. Cline, San Francisco, 1961; E. L. Turner, Secretary, Chicago.

Council on Medical Service—R. L. Novy, Detroit, 1957; R. B. Chrisman Jr., Coral Gables, Fla., 1958; J. F. Burton, Oklahoma City, 1958; J. D. McCarthy, Chairman, Omaha, 1959; J. Lafe Ludwig, Los Angeles, 1959; H. B. Mulholland, Charlottesville, Va., 1960; B. M. McKeown, Coos Bay, Ore., 1960; C. E. Wertz, Buffalo, 1961; T. L. Danaher, Torrington, Conn., 1961; Mr. G. W. Cooley, Acting Secretary, Chicago.

Council on Constitution and Bylaws—W. W. Furey, Chicago, 1957; S. H. Osborn, Hartford, Conn., 1958; F. S. Winslow, Rochester, N. Y., 1959; B. S. Pickett Sr., Chairman, Carrizo Spring, Texas, 1960; Walter E. Vest, Huntington, W. Va., 1961; J. R. Reuling, Windemere, Fla.; the President, and the Speaker and Vice Speaker of the House of Delegates.

STANDING COMMITTEES OF THE BOARD OF TRUSTEES

Council on Drugs—T. Sollmann, Chairman, Cleveland, 1957; J. P. Leake, Washington, D. C., 1957; A. C. Curtis, Ann Arbor, Mich., 1957; W. C. Cutting, San Francisco, 1958; O. O. Meyer, Madison, Wis., 1958; M. H. Seevers, Ann Arbor, Mich., 1958; T. M. Brown, Washington, D. C., 1958; J. Stokes Jr., Philadelphia, 1959; P. H. Long, Brooklyn, 1959; W. G. Workman, Bethesda, Md., 1959; F. A. Simeone, Cleveland, 1959; C. A. Dragstedt, Chicago, 1960; I. Starr, Philadelphia, 1960; J. M. Hayman, Boston, 1960; E. M. K. Geiling, Chicago, 1961; E. M. Nelson, Washington, D. C., 1961; H. K. Beecher, Boston, 1961; H. D. Kautz, Secretary, Chicago.

Council on Scientific Assembly—S. P. Newman, Denver, 1957; J. R. McVay, Kansas City, Mo., 1957; H. R. Viets, Brookline, Mass., 1958;* C. H. Phifer, Chicago, 1958; S. P. Reimann, Philadelphia, 1959; A. McMahon, Chairman, St. Louis, 1959; L. W. Larson, Bismarck, N. D., 1960; C. A. Lincke, Carrollton, Ohio, 1960; M. E. DeBakey, Houston, Texas, 1961; T. G. Hull, Secretary, Chicago.

Council on Medical Physics—H. H. Reese, Madison, Wis., 1957; D. Vail, Chicago, 1957; S. Warren, Boston, 1957; R. Chamberlain, Philadelphia, 1958; O. Glasser, Cleveland, 1958; A. C. Cipollaro, New York, 1958; F. C. Bost, San Francisco, 1959; F. H. Krusen, Chairman, Rochester, Minn., 1959; M. R. Mobley, Florence, S. C., 1959; A. Blalock, Baltimore, 1960; G. J. Thomas, Pittsburgh, 1960; G. E. Wakerlin, Chicago, 1961; W. B. Allan, Baltimore, 1961; R. E. DeForest, Secretary, Chicago.

Council on Foods and Nutrition—W. H. Griffith, Los Angeles, 1957; W. J. Darby, Nashville, Tenn., 1958; C. A. Elvehjem, Madison, Wis., 1958; J. B. Youmans, Nashville, Tenn., 1958; L. A. Maynard, Ithaca, N. Y., 1959; G. A. Goldsmith, New Orleans, 1959; C. S. Davidson, Chairman, Boston, 1959; C. A. Smith, Boston, 1960; D. B. Hand, Geneva, N. Y., 1960; R. Jackson, Columbia, Mo., 1961; G. R. Cowgill, Hamden, Conn., 1961; P. L. White, Secretary, Chicago.

Council on Industrial Health—F. S. Richards, Salt Lake City, 1957; J. H. Sterner, Rochester, N. Y., 1957; B. T. Johnstone, Los Angeles, 1958; L. C. McGee, Wilmington, Del., 1958; C. F. Shook, Toledo, Ohio, 1958; J. N. Gallivan, East Hartford, Conn., 1959; V. C. Baird, Houston, Texas, 1959; O. A. Sander, Milwaukee, 1959; R. A. Kehoe, Cincinnati, 1960; E. S. Jones, Hammond, Ind., 1960; W. P. Shepard, Chairman, New York, 1961; M. N. Sewaquist, New York, 1961; B. D. Holland, Secretary, Chicago.

Council on National Defense—R. A. Benson, Bremerton, Wash., 1957; P. H. Long, Brooklyn, 1957; R. L. Sensenich, South Bend, Ind., 1958; H. C. Lueth, Evanston, Ill., 1958; H. S. Diehl, Chairman, Minneapolis, 1959; R. L. Meiling, Columbus, Ohio, 1959; C. P. Hungate, Kansas City, Mo., 1960; W. B. Martin, Norfolk, Va., 1960; David H. Poer, Atlanta, Ga., 1961; H. B. Wright, Cleveland, 1961; Mr. F. W. Barton, Secretary, Chicago.

Council on Rural Health—W. J. Weese, Ontario, Ore., 1957; W. A. Wright, Williston, N. D., 1957; F. S. Crockett, Chairman, Lafayette, Ind., 1958; G. F. Bond, Bat Cave, N. C., 1958; C. S. Mundy, Toledo, Ohio, 1959; C. R. Henry, Little Rock, Ark., 1959; F. A. Humphrey, Ft. Collins, Colo., 1960; N. H. Gardner, E. Hampton, Conn., 1960; A. T. Stewart, Lubbock, Texas, 1961; C. B. Andrews, Sonoma, Calif., 1961; Mrs. A. Hibbard, Secretary, Chicago.

Council on Mental Health—H. T. Carmichael, Chicago; M. R. Kaufman, New York, 1957; L. H. Bartemeier, Chairman, Baltimore, 1958; W. H. Baer, Peoria, Ill., 1958; F. J. Gerty, Chicago, 1958; L. H. Smith, Philadelphia, 1959; G. E. Gardner, Boston, 1959; F. M. Forster, Washington, D. C., 1960; R. J. Plunkett, Secretary, Chicago.

Committee on Legislation—J. R. Reuling, Chairman, Windemere, Fla.; C. Byron Blaisdell, Asbury Park, N. J.; R. B. Chrisman, Jr., Coral Gables, Fla.; Frank C. Coleman, Des Moines, Iowa; Harlan English, Danville, Ill.; Frank J. Holroyd, Princeton, W. Va.; J. Lafe Ludwig, Los Angeles; J. E. McDonald, Tulsa, Okla.; J. R. McVay, Kansas City, Mo.; D. Olan Meeker, Riverside, Conn.; M. L. Phelps, Denver; G. E. Twente, Jackson, Miss.; Mr. W. E. Whyte, Secretary, Chicago.

*Deceased

The Secretary, Assistant Secretary and Editor are ex officio members of all Standing Committees

REGISTRATION

The Registration Bureau will be located in the entrance lobby of the New York Coliseum and will be open from 12 noon to 4 p. m. Sunday, June 2; from 8 a. m. to 5:30 p. m. Monday, June 3; from 8:30 a. m. to 5:30 p. m. Tuesday, Wednesday and Thursday, June 4, 5 and 6; and until noon on Friday, June 7.

An information window will be operated in connection with the Registration Bureau.

Who May Register

Members—Active, Affiliate, Associate, Service, and Honorary—and invited guests may take part in the work of the sections and may register for attendance at meetings.

Residents, interns, senior medical students, Student A. M. A. members, and registered nurses will be given registration cards at a designated window. These should be filled in and presented at the window indicated, together with a card or letter signed by the superintendent of the hospital where they are registered or the dean of the medical school they attend.

Register Early

Members living in the New York City area, as well as all other physicians who are in New York City on Sunday, should register as early as possible. They may register on Sunday, June 2, between 12 noon and 4 p. m.

The names and convention or local addresses of those who register will be included in the *Daily Bulletin*. This will enable visiting physicians to find friends who have registered.

Suggestions That Will Facilitate Registration

Members who have Advance Registration Cards can be registered with little or no delay, if the following information is filled in prior to registering:

The name of your convention hotel or local address, the number of guests you wish to register, and a check mark oppose the Scientific Section in which you wish to vote.

Present completed card at windows marked "Advance Registration" and you will receive a badge and a copy of the Official Program.

Members without Advance Registration Cards will find blank cards to fill in on tables near the registration windows. The filled in card should be presented, together with your American Medical Association Membership pocket card, at the window indicated. Your pocket card will be returned to you and you will receive a badge and a copy of the Official Program.

Scientific Assembly Registration for General Officers and Delegates at the Waldorf-Astoria Hotel

General officers of the American Medical Association and members of the House of Delegates may register for the Scientific Assembly near the entrance to the Grand Ballroom at the Waldorf-Astoria Hotel on Monday, June 3, beginning at 8 a. m. Delegates are requested to register for the Scientific Assembly before presenting credentials to the Reference Committee on Credentials of the House of Delegates. Delegates are urged to register early so that all members of the House of Delegates may be seated in time for the opening session of the House, which will convene at 10 a. m. Monday, June 3.

If any delegate or officer is in New York on Saturday or Sunday, June 1 or 2, he may register for the Scientific Assembly in the Secretary's Office in the Regency Suite of the Waldorf-Astoria.

Registration for Lay Executive Secretaries

Lay executive secretaries of component and constituent associations may register in the Secretary's Office in the Regency Suite at the Waldorf-Astoria Hotel any time Saturday or Sunday, June 1 and 2, or any time *after 12 noon* Monday, June 3, during the week of the session.

HOUSE OF DELEGATES

The House of Delegates will meet at 10 a. m. Monday, June 3, 1957, in the Grand Ballroom of the Waldorf-Astoria Hotel.

The Reference Committee on Credentials will meet near the entrance to the Grand Ballroom at 8:30 a. m., Monday, June 3, 1957. Credentials should be presented to the Reference Committee on Credentials as early as possible, so that the official roll of the House may be prepared and the House of Delegates may organize promptly and proceed with its business. The Reference Committee on Credentials will also meet preceding each subsequent meeting of the House of Delegates.

Each delegate should present properly executed credentials signed by the president or secretary of the constituent association, by the chairman or secretary of the section, or by the surgeon general or chief medical director of the government service he represents. Alternates presenting credentials should see that the delegates whose places they are to take have signed the alternate authorization.

Each delegate, *before* registering with the Reference Committee on Credentials, should register for the Scientific Assembly at a desk near the entrance to the Grand Ballroom.

Meeting rooms have been provided for the use of Reference Committees of the House of Delegates. Reference Committee meetings must be held at the time and in the room assigned so that any who are interested in referred matters may appear before the committees.

Typists will be available in the Secretary's Office (Regency Suite) for preparing official reports, resolutions, and motions.

FOR PHYSICIANS ONLY

On Tuesday and Wednesday, June 4 and 5, the Scientific and Technical Exhibits, as well as the Television and Motion Picture programs at the New York Coliseum will be open to A. M. A. Member Physicians only from 8:30 a. m. to 12 noon. Only physicians wearing a physician's badge will be admitted to the Coliseum Exhibit area on Tuesday and Wednesday mornings.

MEETING PLACES

HOUSE OF DELEGATES: Grand Ballroom, Waldorf-Astoria Hotel, Park Avenue and 50th Street.

GENERAL SCIENTIFIC MEETINGS: New York Coliseum.

INAUGURAL CEREMONY: Grand Ballroom, Waldorf-Astoria Hotel.

MOTION PICTURES: Theater and Barbizon Room, Barbizon-Plaza Hotel, 106 Central Park South.

COLOR TELEVISION: Room 5, 4th floor, New York Coliseum.

GENERAL HEADQUARTERS, REGISTRATION BUREAU, SCIENTIFIC EXHIBIT, TECHNICAL EXHIBITS AND INFORMATION BUREAU: New York Coliseum.

SECTIONS OF SCIENTIFIC ASSEMBLY

ANESTHESIOLOGY: Terrace Room, The Plaza, Fifth Avenue and 59th Street.

DERMATOLOGY: Tudor Room, Henry Hudson Hotel, 353 W. 57th Street.

DISEASES OF THE CHEST: Tudor Room, Henry Hudson Hotel, 353 W. 57th Street.

EXPERIMENTAL MEDICINE AND THERAPEUTICS: Ballroom, The Plaza, Fifth Avenue and 59th Street.

GASTROENTEROLOGY AND PROCTOLOGY: Room 4, 4th floor, New York Coliseum.

GENERAL PRACTICE: Ballroom, Henry Hudson Hotel, 353 W. 57th Street.

INTERNAL MEDICINE: Ballroom, The Plaza, Fifth Avenue and 59th Street.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY: Ballroom, Park Sheraton Hotel, Seventh Avenue and 56th Street.

MILITARY MEDICINE: Room 1, 2d floor, New York Coliseum.

NERVOUS AND MENTAL DISEASES: Colonnades, Essex House, 160 Central Park South.

OBSTETRICS AND GYNECOLOGY: Ballroom, Henry Hudson Hotel, 353 W. 57th Street.

OPHTHALMOLOGY: Ballroom, Park Sheraton Hotel, Seventh Avenue and 56th Street.

ORTHOPEDIC SURGERY: Room 2, 2d floor, New York Coliseum.

PATHOLOGY AND PHYSIOLOGY: Room 1, 2d floor, New York Coliseum.

PEDIATRICS: Terrace Room, The Plaza, Fifth Avenue and 59th Street.

PHYSICAL MEDICINE: Forum Room, Park Sheraton Hotel, Seventh Avenue and 56th Street.

PREVENTIVE MEDICINE: Room 3, 3d floor, New York Coliseum.

RADIOLOGY: Room 2, 2d floor, New York Coliseum.

SURGERY, GENERAL AND ABDOMINAL: Room 4, 4th floor, New York Coliseum.

UROLOGY: Colonnades, Essex House, 160 Central Park South.

MISCELLANEOUS TOPICS, SESSION ON ALLERGY: Room 3, 3d floor, New York Coliseum; SESSION ON LEGAL MEDICINE: Tudor Room, Henry Hudson Hotel, 353 W. 57th Street; SESSION ON MEDICAL COMMUNICATION: Room 3, 3d floor, New York Coliseum.

The New York Coliseum is located in Columbus Circle.

NEW YORK HOTEL RESERVATIONS

If hotel reservations have not yet been secured by physicians other than delegates or officers of the Association who expect to attend the New York meeting, it is suggested that such physicians fill in and send directly to the A. M. A. Subcommittee on Hotels, c/o New York Convention and Visitors Bureau, 90 E. 42d St., New York 17, the application form that may be found on advertising page 163 of this issue of THE JOURNAL. Applications for hotel reservations should *not* be sent to the American Medical Association offices in Chicago. That will delay receipt of the application by the Subcommittee on Hotels and processing of your hotel reservation.

INAUGURAL CEREMONY

Dr. David B. Allman, Atlantic City, N. J., will be inaugurated as President of the American Medical Association at special ceremonies Tuesday evening, June 4, in the Grand Ballroom of the Waldorf-Astoria Hotel. The program will be telecast locally to the general public.

In addition to Dr. Allman's inaugural address, the ceremony will feature a concert by the United States Army Chorus.

The Inaugural Ceremony is open to physicians and their families, exhibitors, and guests.

ENTERTAINMENT

President's Reception and Ball

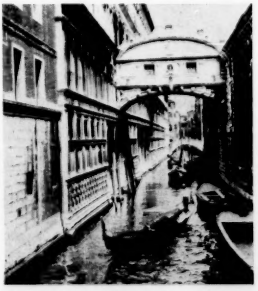
The President of the Association will be honored after the Inaugural Ceremony with a reception and ball, to be held in the Grand Ballroom of the Waldorf-Astoria Hotel, Tuesday evening, June 4, from 10 p. m. to 1 a. m. Members of the Association and their guests are invited to attend.

Physicians Art Exhibit

The 20th annual art exhibition of the American Physicians Art Association will be held in conjunction with the Annual Meeting of the A. M. A. in New York City, June 3-4, 1957.

All forms of art will be exhibited, with prizes given for a beginner's class (less than three years' pursuit of hobby) and an advanced class. The media represented include: oil still life, oil scapes, oil portraits, sculpture, photography, crafts, water colors, and pastels. Any member of the American Medical Association is eligible. The membership fees are $5 regular member and $20 sponsor member. The exhibit fee is $5 for each piece. Sponsor members may exhibit two pieces free. The exhibit is to be held on the second floor of the Coliseum (N. W. area). The deadline arrival date is May 25th. Address all communications to American Physicians Art Association, F. H. Redewill Jr., M.D., 124 E. Hadley St., Whittier, Calif.

Postconvention Tours



Bridge of Sighs in Venice.

Medical Tours, P. O. Box 3433, Chicago 54, Ill., has planned tours to Europe and Bermuda for doctors and their families after the A. M. A. Annual Meeting in New York City in June. Special clinical meetings have been planned in London, Paris, and Geneva. For information, write to the above address.

Luncheons, Dinners and Meetings of Fraternity, Alumni and Other Organizations

ALPHA KAPPA KAPPA, Luncheon, Wednesday, June 5, 12:30 p. m., Stampler's Filet Mignon Restaurant. Tickets available from Dr. Charles D. Marple, 4 Deklyn Terrace, Rowayton, Conn.

AMERICAN PHYSICIANS FELLOWSHIP, for the Israel Medical Association, Annual Assembly and Cocktail Party, Sunday, June 2, 6:30 p. m., Commodore Hotel.

BOSTON UNIVERSITY SCHOOL OF MEDICINE ALUMNI ASSOCIATION, Dinner, Wednesday, June 5, 7:00 p. m., The Plaza Hotel. Tickets available from Grace E. Auburn, Boston University Alumni Office, 80 E. Concord St., Boston 18.

CHRISTIAN MEDICAL SOCIETY, Annual Banquet, Thursday, June 6, 6:30 p. m., place to be announced. Tickets available from C. M. S. Office, 108 N. Dearborn St., Chicago, or at New York Coliseum, Booth G-3.

CHICAGO MEDICAL SCHOOL, Dinner, Wednesday, June 5, 6:15 p. m., Park Sheraton Hotel. Informal reception at Alumni lounge during convention week at Park Sheraton. Tickets available from Chicago Medical School, 710 S. Wolcott, Chicago.

COLLEGE OF MEDICAL EVANGELISTS ALUMNI ASSOCIATION, Dinner, Wednesday, June 5, time and place to be announced.

COLLEGE OF PHYSICIANS AND SURGEONS ALUMNI ASSOCIATION (Columbia University), Reception and Cocktail Party, Wednesday, June 5, 5:30 p. m., Columbia University Club, 4 W. 43rd St. Tickets available from Alumni Office.

CORNELL UNIVERSITY MEDICAL COLLEGE ALUMNI ASSOCIATION, Luncheon, Thursday, June 6, 12:45 p. m., New York Hospital–Cornell Medical Center. Tickets available from Alumni Office.

CREIGHTON UNIVERSITY ALUMNI ASSOCIATION, Dinner, Thursday, June 6. Time and place to be announced.

DUKE UNIVERSITY MEDICAL ALUMNI ASSOCIATION, Dinner, Wednesday, June 5. Time and place to be announced. Tickets available from: Dr. T. L. PEELE, Box 3811, Duke Hospital, Durham, N. C.

FEDERATION OF CATHOLIC PHYSICIANS' GUILDS, Dinner, Wednesday, June 5, 6:30 p. m., Grand Ballroom–Waldorf-Astoria Hotel. Tickets available from Federation Office, 453 Madison Ave., New York 22.

HAHNEMANN MEDICAL COLLEGE ALUMNI ASSOCIATION, Dinner, Wednesday, June 5, 6 p. m., Cavanaghs, 258 W. 23rd St., New York City. Tickets available from Alumni Office.

HARVARD MEDICAL ALUMNI ASSOCIATION, Informal Social Hour, Thursday, June 6, 5 to 7 p. m., Harvard Club of New York, 27 W. 44th St. Tickets not necessary.

HENRY FORD HOSPITAL MEDICAL ASSOCIATION, Reception and Cocktails, Tuesday, June 4, 5:30 to 7 p. m., Waldorf-Astoria Hotel, Rooms 4-JKL.

JEFFERSON MEDICAL COLLEGE ALUMNI ASSOCIATION, Dinner, Wednesday, June 5, 7 p. m., Leone's Restaurant, 239 W. 48th St. Tickets available from Alumni Office, 1025 Walnut St., Philadelphia.

JOHNS HOPKINS UNIVERSITY, Dinner, Wednesday, June 5, 7 p. m., Waldorf-Astoria, Astor Gallery.

KNICKERBOCKER HOSPITAL ALUMNI ASSOCIATION, Luncheon, Thursday, June 6, 12 noon, Knickerbocker Hospital, 70 Convent Ave., New York City. Tickets not necessary.

LOYOLA UNIVERSITY MEDICAL ALUMNI ASSOCIATION, Cocktail Party, Wednesday, June 5th, 6:00 p. m., Waldorf-Astoria.

LUTHERAN MEDICAL MISSION ASSOCIATION, Dinner, Wednesday, June 5, 6:30 p. m., meet at True Light Chinese Mission, 195 Worth St. Tickets available from Mrs. John Jensen, 825 58th St., Brooklyn, N. Y.

MARQUETTE MEDICAL ALUMNI, Luncheon, Thursday, June 6, 12:30 p. m., Coliseum, Room 262 (South America Room). Tickets available from Alumni Office.

MAYO ALUMNI ASSOCIATION, Cocktail Party, Tuesday, June 4, 6:30 p. m., Hotel Statler. Tickets available from George F. Schmitt, 30 S. E. Eighth St., Miami, Fla.

MCGILL UNIVERSITY GRADUATES SOCIETY, Dinner, Wednesday, June 5, 6 p. m., Yale Club, 50 Vanderbilt Ave.

NATIONAL FEDERATION OF CATHOLIC PHYSICIANS GUILDS, Twenty-fifth anniversary Mass, St. Patrick's Cathedral, Wednesday, June 5th, 9:00 a. m.; Silver Jubilee Dinner, Grand Ballroom, Waldorf-Astoria Hotel, Wednesday, June 5th, 6:30 p. m.

NEW YORK MEDICAL COLLEGE ALUMNI ASSOCIATION, Luncheon, Thursday, June 6, 12 noon, New York Medical College. Tickets available from Alumni Office.

NORTHWESTERN UNIVERSITY MEDICAL DIVISION ALUMNI ASSOCIATION, Luncheon, Thursday, June 6, 12:30 p. m., University Club (Oak Room), 1 W. 54th St. Tickets available from Alumni Office, 303 E. Chicago Ave., Chicago 11.

PHI BETA PI, Informal luncheon may be planned. Time and place to be announced.

PHI CHI MEDICAL FRATERNITY, Luncheon, Wednesday, June 5, 12 noon, New York Athletic Club.

PHI DELTA EPSILON, Open House, Wednesday, June 5, 9 p. m. to midnight, Belmont Plaza Hotel. Tickets not necessary.

PHI LAMBDA KAPPA MEDICAL FRATERNITY, Luncheon, Wednesday, June 5, 12 noon, Henry Hudson Hotel. Tickets available from Dr. Nathan Davis, 27 W. 55th St., New York City.

PHI RHO SIGMA FRATERNITY, Luncheon, Wednesday, June 5, 12:15 p. m., Bob Olin's Cafe, Central Park and 61st Street.

RUSH MEDICAL COLLEGE ALUMNI ASSOCIATION, Luncheon, Thursday, June 6, 12:15 p. m., The Plaza Hotel. Tickets available from Alumni Office, Rush Medical College, 1758 W. Harrison St., Chicago.

ST. LOUIS UNIVERSITY SCHOOL OF MEDICINE ALUMNI ASSOCIATION, Dinner, Wednesday, June 5, 6:30 p. m., Savoy-Plaza. Tickets available from Alumni Office, 1402 S. Grand, St. Louis 4.

TEMPLE UNIVERSITY MEDICAL ALUMNAE, Luncheon, Thursday, June 6. Time and place to be announced.

THETA KAPPA PSI, Luncheon, Wednesday, June 5, 1:00 p. m., Henry Hudson Hotel. Tickets available from N. Philip Norman, M.D., 19 East 88th Street, New York 28.

TUFTS MEDICAL ALUMNI ASSOCIATION, Social Party, Wednesday, June 5, 5 to 7 p. m., Park Sheraton Hotel. Tickets not necessary.

UNIVERSITY OF LOUISVILLE ALUMNI ASSOCIATION, Dinner. Details to be announced.

UNIVERSITY OF MARYLAND ALUMNI ASSOCIATION, Cocktail Party, Wednesday, June 5, 5 to 7 p. m., Coliseum Cocktail Lounge, Second Mezzanine Floor. Tickets available from Dr. Joseph Nataro, 172 Littleton Ave., Newark 3, N. J.

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE ALUMNI ASSOCIATION, Luncheon, Thursday, June 6, 12:30 p. m., Plaza Hotel. Tickets available from Alumni Office.

UNIVERSITY OF PENNSYLVANIA MEDICAL ALUMNI SOCIETY, Dinner, Wednesday, June 5, 7 p. m. Cocktails–Cash bar–6:30, Waldorf-Astoria Janssen Room.

UNIVERSITY OF VERMONT COLLEGE OF MEDICINE ALUMNI, Dinner, Wednesday, June 5, 6 p. m., Princeton Club, 39 E. 39th St. Tickets available from Dean's Office, College of Medicine, University of Vermont, Burlington, Vt.

WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION, Luncheons, Tuesday and Wednesday, June 4 and 5–Hotel Roosevelt, 12:30 p. m. Tea, Monday, June 3, Tavern on the Green, 3:30 to 5 p. m., Dinner, Wednesday, June 5, Hotel Roosevelt, 6:30.

WOMAN'S MEDICAL COLLEGE OF PENNSYLVANIA ALUMNAE ASSOCIATION, Dinner, Wednesday, June 5, Beekman Tower–Ballroom. Tickets available from Alumnae Office.

LOCAL COMMITTEE ON ARRANGEMENTS

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Subcommittee on House of Delegates Dinner

C. JOSEPH DELANEY, Chairman

R. J. Azzari
Thomas D'Angelo
E. P. Flood
John H. Garlock
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Arthur M. Master
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Mrs. Aaron Kottler
Mrs. Harry S. Lichtman
Mrs. John James Scalzo
Mrs. Milton Spiegel
Mrs. Joseph A. Squillace

WOMAN'S AUXILIARY

A cordial invitation is extended to all members of the Woman's Auxiliary to the American Medical Association, their guests, and the guests of physicians attending the convention of the American Medical Association, to participate in all social functions and attend the general meetings of the Auxiliary.

Preconvention Schedule

SATURDAY, JUNE 1

COMMITTEE MEETINGS—HOTEL ROOSEVELT

1:00 p. m. Nominating Committee—Vanderbilt Suite No. 1 (second floor). Mrs. Mason G. Lawson, Chairman.

8:00 p. m. Finance Committee—Vanderbilt Suite No. 2 (second floor). Mrs. Jay G. Linn, Chairman.

SUNDAY, JUNE 2

12:00 noon to 4:00 p. m. Registration and Exhibits—Balcony Lounge (mezzanine). Members of the Hospitality Committee will welcome members and guests of the Woman's Auxiliary during the convention.

COMMITTEE MEETINGS

2:30 p. m. Revisions Committee—Vanderbilt Suite No. 1 (second floor). Mrs. Mason G. Lawson, Acting Chairman.

3:00 p. m. Resolutions Committee—Vanderbilt Suite No. 2 (second floor). Mrs. Rollo K. Packard, Chairman.

4:00 p. m. Nominating Committee—Vanderbilt Suite No. 6 (second floor). Mrs. Mason G. Lawson, Chairman.

BOARD OF DIRECTORS MEETING AND LUNCHEON

10:30 a. m. Meeting—The Stuyvesant Suite (second floor). Mrs. Robert Flanders, President, presiding.

1:00 p. m. Luncheon—Vanderbilt Suite No. 3-4-5 (second floor). Mrs. Robert Flanders, President, presiding.

MONDAY, JUNE 3

9:00 a. m. to 5:00 p. m. Registration and Exhibits—Balcony Lounge (mezzanine).

ROUND TABLE DISCUSSIONS—MEMBERS INVITED

Mrs. E. Arthur Underwood, presiding, Palm Terrace
Mrs. Clark Bailey, presiding, Madison Room

9:00 a. m. to 10:30 a. m. Legislation—Palm Terrace (lobby). Mrs. Charles L. Goodhand, Chairman.

10:00 a. m. to 11:00 a. m. *Today's Health*—Madison Room (mezzanine). Mrs. C. Rodney Stoltz, Chairman.

10:30 a. m. to 11:30 a. m. Public Relations—Palm Terrace (lobby). Mrs. F. Erwin Tracy, Chairman.

11:00 a. m. to 12:00 noon American Medical Education Foundation—Madison Room (mezzanine). Mrs. Francis Fargher, Chairman.

11:30 a. m. to 12:30 p. m. Program—Palm Terrace (lobby). Mrs. John M. Chenault, Chairman.

1:00 p. m. to 2:30 p. m. Publications, News Letters and Bulletin Circulation—Madison Room (mezzanine). Mrs. E. M. Egan, Chairman. Mrs. Matthew N. Hosmer, Chairman.

1:30 p. m. to 2:30 p. m. Organization—Palm Terrace (lobby). Mrs. E. Arthur Underwood, Chairman.

TEA AND FASHION SHOW—TAVERN-ON-THE-GREEN, CENTRAL PARK

3:30 p. m. to 5:00 p. m. Honoring Mrs. Robert Flanders, President and Mrs. Paul C. Craig, President-Elect.

Special Guests: Members of the National Board of Directors, National Committee Chairmen, State Presidents, and Wives of Officers and Trustees of the American Medical Association.
Hostesses: Woman's Auxiliary to the Medical Society of the State of New York.

Convention Program

TUESDAY, JUNE 4

8:00 a. m. to 4:00 p. m. Registration and Exhibits—Ballroom Foyer (mezzanine).

8:45 a. m. Formal Opening of the 34th Annual Convention of the Woman's Auxiliary to the American Medical Association, Grand Ballroom (mezzanine).

INVOCATION

The Reverend Doctor James N. Gettemy, Minister, Garden City Community Church, Garden City, New York.

PLEDGE OF ALLEGIANCE TO THE FLAG

Mrs. David W. Thomas, Past National President.

PLEDGE OF LOYALTY

Mrs. George Turner, Past National President.

GREETINGS

Dr. Philip D. Allen, President, New York County Medical Society.

Dr. Gerald Dorman, General Convention Chairman, American Medical Association.

ADDRESS OF WELCOME

Mrs. Albert Vander Veer II, Immediate Past President, Woman's Auxiliary to the Medical Society of the State of New York.

RESPONSE

Mrs. Paul A. Clayton, President, Woman's Auxiliary to the Utah State Medical Association.

PRESENTATION OF CONVENTION CHAIRMAN

Mrs. Harry F. Pohlmann and Mrs. Elliott V. B. Vurgason.

INTRODUCTIONS

Mrs. Robert Flanders, President.

PRESENTATION OF PRESIDENT-ELECT

Mrs. Paul C. Craig.

ROLL CALL

Mrs. Richard F. Stover, Constitutional Secretary.

MINUTES OF THE THIRTY-THIRD ANNUAL CONVENTION

Mrs. Richard F. Stover.

PRESENTATION OF PROGRAM

CONVENTION RULES OF ORDER

Mrs. Luther H. Kice.

ANNOUNCEMENT OF NATIONAL CONVENTION COMMITTEES

Mrs. Robert Flanders, President.

IN MEMORIAM

Mrs. Lee S. Liggan, President, Woman's Auxiliary to the Medical Society of Virginia.

ADDRESS OF THE PRESIDENT

Mrs. Robert Flanders.

REPORTS OF OFFICERS

President-Elect, Mrs. Paul C. Craig.
First Vice-President, Mrs. E. Arthur Underwood.
Treasurer (and auditor's report), Mrs. M. A. Gold.
Constitutional Secretary, Mrs. Richard F. Stover.

PRESENTATION OF NATIONAL DIRECTORS

REPORT OF BOARD OF DIRECTORS

Mrs. Robert Flanders.

STATE REPORTS—SOUTHERN REGION

Mrs. Clark Bailey, Second Vice-President, Moderator.

12:30 p. m.

Luncheon in honor of the Past Presidents of the Woman's Auxiliary to the American Medical Association, Palm Terrace Suite (lobby). Mrs. Robert Flanders, President, presiding.

Guest Speaker: Dr. Howard Rusk, Professor and Chairman, Department of Physical Medicine and Rehabilitation, New York University–Bellevue Medical Center. "Sick People in a Troubled World."

Tickets: $6 (including tax and gratuity).

2:30 p. m.

STATE REPORTS—NORTH CENTRAL REGION

Mrs. Frank Gastineau, Third Vice-President, Moderator.

REPORTS OF CHAIRMEN OF STANDING COMMITTEES

American Medical Education Foundation, Mrs. Francis Fargher.

Presentation of National Auxiliary A. M. E. F. Awards.

Finance (and presentation of the Budget for 1957-1958), Mrs. Jay G. Linn.

History, Mrs. George Turner.

Legislation, Mrs. Charles L. Goodhand.

Organization, Mrs. E. A. Underwood.

Program, Mrs. John M. Chenault.

STATE REPORTS—EASTERN REGION

Mrs. Edgar E. Quayle, Fourth Vice-President, Moderator.

REPORT OF THE NOMINATING COMMITTEE FOR 1957

(First Reading), Mrs. Mason G. Lawson, Chairman.

PRESENTATION OF ELECTION COMMITTEE AND TELLERS

ELECTION OF THE 1958 NOMINATING COMMITTEE

8:00 p. m.

Opening Meeting of the American Medical Association Convention.

10:00 p. m.

Reception and Ball in Honor of the President of the American Medical Association, Grand Ballroom, Waldorf-Astoria Hotel.

WEDNESDAY, JUNE 5

9:00 a. m. to 4:00 p. m. Registration and Exhibits—Ballroom Foyer (mezzanine).

9:00 a. m.

General Meeting of the Woman's Auxiliary to the American Medical Association, Grand Ballroom (mezzanine). Mrs. Robert Flanders, President, presiding.

MINUTES

Mrs. Richard F. Stover.

CONVENTION ANNOUNCEMENTS

Mrs. Harry F. Pohlmann.

REPORT OF TELLERS—ELECTION OF THE

1958 NOMINATING COMMITTEE

REPORTS OF CHAIRMEN OF STANDING COMMITTEES (continued)

Publications, Mrs. E. M. Egan.
Public Relations, Mrs. F. Erwin Tracy.
Revisions, Mrs. Mason G. Lawson, Acting Chairman.
Today's Health, Mrs. C. Rodney Stoltz.
Presentation of Awards, Mr. Robert Enlow, Circulation Director, *Today's Health*.

STATE REPORTS—WESTERN REGION

Mrs. Carl E. Burkland, Fifth Vice-President, Moderator.

REPORTS OF CHAIRMEN OF SPECIAL COMMITTEES

Bulletin Circulation, Mrs. Matthew N. Hosmer.
Civil Defense, Mrs. Paul E. Rauschenbach.
Mental Health, Mrs. Aaron Margulis.
Recruitment, Mrs. L. D. Jacobson.
Reference, Mrs. Rollo K. Packard.
Safety, Mrs. Thomas F. Reid.

REPORT OF THE CENTRAL OFFICE

Miss Margaret N. Wolfe, Executive Secretary.

12:30 p. m.

Luncheon in honor of Mrs. Robert Flanders, President, and Mrs. Paul C. Craig, President-Elect, Palm Terrace Suite (lobby). Mrs. Mason G. Lawson, Past National President, presiding.

Greetings: Dr. David B. Allman, President, American Medical Association.

Guest Speaker: Dr. Dwight H. Murray, Immediate Past-President, American Medical Association.

Presentation of Woman's Auxiliary Contribution to the American Medical Education Foundation: Mrs. Robert Flanders, President.

Presentation of A. M. E. F. Awards: Dr. George F. Lull, Vice-President, American Medical Education Foundation.

Guests of Honor: Dr. Dwight H. Murray, Immediate Past President, American Medical Association; Dr. David B. Allman, President; Dr. Franklin S. Crockett, Vice-President; Dr. George F. Lull, Secretary and General Manager; Dr. Ernest B. Howard, Assistant Secretary; Dr. J. J. Moore, Treasurer; Dr. E. Vincent Askey, Speaker, House of Delegates; Dr. Louis M. Orr, Vice-Speaker; Dr. Austin Smith, Editor; and members of the Board of Trustees—Dr. Gunnar Gundersen, Chairman; Dr. F. J. L. Blasingame, Dr. Edwin S. Hamilton, Dr. Hugh H. Hussy Jr., Dr. Leonard W. Larson, Dr. James R. McVay, Dr. Thomas P. Murdock, Dr. Julian P. Price, Dr. James R. Reuling.

Tickets: $6 (including tax and gratuity).

ROUND TABLE DISCUSSIONS—MEMBERS INVITED

Mrs. Frank Gastineau, presiding, Ballroom.

Mrs. Edgar E. Quayle, presiding, Madison Room.

2:30 p. m. to 3:30 p. m. Safety—Ballroom (mezzanine). Mrs. Thomas F. Reid, Chairman.

2:30 p. m. to 3:30 p. m. Recruitment—Madison Room (mezzanine). Mrs. L. D. Jacobson, Chairman.

3:30 p. m. to 4:30 p. m. Civil Defense—Ballroom (mezzanine). Mrs. Paul E. Rauschenbach, Chairman.

3:30 p. m. to 4:30 p. m. Mental Health—Madison Room (mezzanine). Mrs. Aaron Margulis, Chairman.

INTERVIEWS AND CONFERENCES

Mrs. Carl E. Burkland, presiding, Room E and F.

2:30 p. m. to 3:00 p. m. Parliamentarian—Room E and F. Mrs. Luther H. Kice.

3:00 p. m. to 3:30 p. m. Revisions—Room E and F. Mrs. Mason G. Lawson, Acting Chairman.

3:30 p. m. to 4:00 p. m. Reference—Room E and F. Mrs. Rollo K. Packard, Chairman.

4:00 p. m. to 4:30 p. m. History—Room E and F. Mrs. George Turner, Chairman.

4:30 p. m. to 5:00 p. m. Finances—Room E and F. Mrs. M. A. Gold, Treasurer. Mrs. Jay G. Linn, Chairman.

THURSDAY, JUNE 6

9:00 a. m. to 12:00 noon Registration and Exhibits—Ballroom Foyer (mezzanine).

9:00 a. m.

General Meeting of the Woman's Auxiliary to the American Medical Association, Grand Ballroom (mezzanine). Mrs. Robert Flanders, President, presiding.

MINUTES

Mrs. Richard F. Stover.

CONVENTION ANNOUNCEMENTS

Mrs. Harry F. Pohlmann.

REPORT OF THE CREDENTIALS AND REGISTRATION COMMITTEE

Mrs. Isadore Zadek, Chairman.

NEW BUSINESS

Revisions to the Constitution and Bylaws—Mrs. Mason G. Lawson, Acting Chairman.

Resolutions—Mrs. Rollo K. Packard, Chairman.

Convention Courtesy Resolutions—Mrs. Leif G. Jensen, Chairman.

REPORT OF THE NOMINATING COMMITTEE

Mrs. Mason G. Lawson, Chairman.

ELECTION OF OFFICERS

INSTALLATION OF OFFICERS

Mrs. Harold F. Wahlquist, Past National President.

PRESENTATION OF PAST PRESIDENT'S PIN

Mrs. Mason G. Lawson, Past National President.

PRESENTATION OF PRESIDENT'S PIN AND GAVEL

Mrs. Robert Flanders.

INAUGURAL ADDRESS

Mrs. Paul C. Craig.

MINUTES

Mrs. Richard F. Stover.

ADJOURNMENT

1:00 p. m.

Meeting of the Board of Directors, Stuyvesant Suite (second floor). Mrs. Paul C. Craig, President, presiding.

2:30 p. m.

Informal Discussion of 1957–58 Committee Programs, (Board of Directors and National Chairmen) Stuyvesant Suite (second floor). Mrs. Paul C. Craig, President, presiding.

7:30 p. m.

Annual Dinner of the Woman's Auxiliary to the American Medical Association for members, husbands, and guests, Grand Ballroom (mezzanine). Dress Optional. Mrs. Harry F. Pohlmann, Convention Chairman, presiding.

Guest Speaker: Allen Richard Foley, Professor of History, Dartmouth College. "Vermont Humor."

Social hour at 6:30 p. m., preceding the dinner.

Tickets: $8 (including tax and gratuity).

FRIDAY, JUNE 7

9:00 a. m. to 12:00 noon Postconvention Workshop for National Officers, Directors, Committee Chairmen, State Presidents and Presidents-Elect, Palm Terrace Suite (lobby). Mrs. Paul C. Craig, President, presiding.

PROGRAM OF THE SCIENTIFIC ASSEMBLY

GENERAL SCIENTIFIC MEETINGS

COLISEUM, ROOM 4, 4TH FLOOR

Monday, June 3—9:30 a. m.

SAMUEL P. NEWMAN, Denver, Member of Council on Scientific Assembly, Presiding.

Symposium on Recent Advances in Surgery

9:30 a. m. **General Surgery.**
JOHN H. MULHOLLAND, George David Stewart Professor of Surgery, New York University College of Medicine, New York.

10:00 a. m. **Cardiovascular Surgery.**
FRANK L. A. GERBODE, Associate Professor of Surgery, Stanford University School of Medicine, San Francisco.

10:30 a. m. **Surgery of Trauma.**
R. ARNOLD GRISWOLD, Professor of Surgery, University of Louisville School of Medicine, Louisville, Ky.

11:00 a. m. **Obstetrics and Gynecology.**
FREDERICK H. FALLS, Professor Emeritus of Obstetrics and Gynecology, University of Illinois College of Medicine, Chicago.

11:30 a. m. **Ear Surgery.**
WALTER E. HECK, Assistant Professor of Surgery (Otorhinolaryngology), Stanford University School of Medicine, San Francisco.

Monday, June 3—2 p. m.

STANLEY P. REIMANN, Philadelphia, Member of Council on Scientific Assembly, Presiding.

Symposium on Recent Advances in Medicine

2:00 p. m. **Physical Fitness.**
SHANE MACCARTHY, Executive Director, President's Committee on Youth Fitness, Washington, D. C.

2:30 p. m. **General Medicine.**
CLARENCE C. PEARSON, Assistant Professor of Medicine, University of Washington School of Medicine, Seattle.

3:00 p. m. **Cardiology.**
OGLESBY PAUL, Clinical Associate Professor of Medicine, University of Illinois College of Medicine, Chicago.

3:30 p. m. **Geriatrics.**
WILLIAM H. LEWIS JR., Memorial Center for Cancer and Allied Diseases, New York.

4:00 p. m. **Endocrinology.**
HENRY H. TURNER, Clinical Professor of Medicine, University of Oklahoma School of Medicine, Oklahoma City.

4:30 p. m. **Nutrition.**
TOM D. SPIES, Professor and Chairman, Department of Nutrition and Metabolism, Northwestern University School of Medicine, Chicago, and Director, Nutrition Clinic, Hillman Hospital, Birmingham, Ala.

Tuesday, June 4—9 a. m.

HENRY R. VIETS, Brookline, Mass., Member of Council on Scientific Assembly, Presiding.

Panel Discussion on the Use and Abuse of Mood-Altering Drugs in Daily Practice

CHAUNCEY D. LEAKE, Dean and Professor of Pharmacology, Ohio State University College of Medicine, Columbus, Ohio, Moderator.

9:00 a. m. **Anesthesiology.**
ROBERT DUNNING DRIPPS, Professor and Chairman, Department of Anesthesiology, University of Pennsylvania School of Medicine, Philadelphia.

Surgery.
WALTER G. MADDOCK, Professor of Surgery, Northwestern University Medical School, Chicago.

Neurology.
HOWARD D. FABING, Chief, Neuropsychiatric Service, Christ Hospital, Cincinnati.

Medicine.
DALE G. FRIEND, Associate in Medicine, Harvard Medical School, Boston.

Tuesday, June 4—12 noon

HENRY R. VIETS, Brookline, Mass., Member of Council on Scientific Assembly, Presiding.

12 noon **Smoking in Relation to Death Rates: A Summary Report Covering 44 Months of Follow-Up on 188,000 Men.**
E. CUYLER HAMMOND, Director, and DANIEL HORN, Assistant Director, Statistical Research Section, Medical and Scientific Department, American Cancer Society, New York.

TRANS-ATLANTIC MEDICAL CONFERENCE

American Medical Association Annual Meeting, New York
The Harvey Tercentenary Congress, London, England

Presented with the cooperation of Smith, Kline & French Laboratories

Wednesday, June 5—10:15 a. m.

CARNEGIE HALL, NEW YORK

Panel on Results of Cardiac Surgery

American Medical Association Panel at Carnegie Hall, New York.
MICHAEL E. DE BAKEY, Professor of Surgery, Baylor University College of Medicine, Houston, Texas, and Member of the Council on Scientific Assembly, Moderator.

Participants: ALFRED BLALOCK, Professor of Surgery, Johns Hopkins University School of Medicine, Baltimore; JOHN H. GIBBON JR., Professor of Surgery, Jefferson Medical College of Philadelphia; FRANK L. A. GERBODE, Associate Professor of Surgery, Stanford University School of Medicine, San Francisco; and GEORGE E. BURCH, Professor of Medicine, Tulane University School of Medicine, New Orleans.

Harvey Society Panel at the Great Hall in the Royal College of Surgeons, London.
SIR CLEMENT PRICE THOMAS, Westminster Hospital, London, Moderator.

Participants: SIR RUSSELL CLAUDE BROCK, Guy's Hospital, London; F. DE G. D'ALLAINES, Professor of Clinical Surgery, Paris Faculty of Medicine, Paris; and JOHN MAURICE HARDMAN CAMPBELL, Guy's Hospital, London.

The Harvey Tercentenary Congress will be held at the Royal College of Surgeons in London, June 3-7, 1957. On Wednesday, June 5 (in the afternoon London time, morning New York time) there will be a direct hook-up by the new trans-Atlantic cable between the auditorium at the Royal College of Surgeons in London and Carnegie Hall in New York.

The program in New York will begin at 10:15 a. m. with brief summaries of the London proceedings by members of the A. M. A. panel.

The two panels will then discuss cardiac surgery by two-way telephone conversation, and the proceedings will be broadcast at both meetings. An opportunity will be given for questions from the audience.

THE PROGRAMS OF THE SECTIONS

OUTLINE OF THE SCIENTIFIC PROCEEDINGS

The following papers are announced to be read before the various sections. The order here is not necessarily the order that will be followed in the Official Program. The Official Program will be similar to the programs issued in previous years and will contain the final program of each section with abstracts of the papers, as well as the scientific exhibits, the program of the Inaugural meeting, and other information. To prevent misunderstandings and protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each physician on registration.

SECTION ON ANESTHESIOLOGY

MEETS IN PLAZA HOTEL, TERRACE ROOM

OFFICERS OF SECTION

Chairman—Scott M. Smith, Salt Lake City.

Vice Chairman—Richard H. Barrett, Hanover, N. H.

Secretary—Daniel C. Moore, Seattle.

Delegate—Edward B. Tuohy, Los Angeles.

Representative to Scientific Exhibit—Edwin L. Rushia, Augusta, Ga.

Executive Committee—Ralph S. Sappenfield, Miami, Fla.; John S. Lundy, Rochester, Minn.; Dr. Smith; Dr. Moore; and Dr. Tuohy.

Wednesday, June 5—9 a. m.

BUSINESS MEETING; PRESENTATION OF RESOLUTIONS; REPORT OF DELEGATE; INTRODUCTION OF EXHIBITORS

Comparative Studies of Tranquilizers Used in Anesthesia.
Irving M. Pallin, Albert E. Chiron, Erwin Lear, and Lucien Rousseau, Brooklyn, N. Y.
Discussion to be opened by Joseph M. White Jr., Oklahoma City, Okla.

Providing a "Steady State" for Cardiac Catheterization Under Anesthesia.
A. S. Keats, Y. Kurosu, and J. Telford, Houston, Texas.
Discussion to be opened by Leonard Brand, New York.

Clinical Applications of Studies of Cardiac Output and Total Peripheral Resistance in Anesthesiology.
Barnett A. Greene, Brooklyn, N. Y.
Discussion to be opened by S. N. Albert, Washington, D. C.

The Combined Use of Narcotic Analgetics and Their Antagonists for the Production of Controllable Apnea in Anesthesiology.
Francis F. Foldes, Robert S. Robbins, Peter B. D'Souza, Deryck Duncalf, and Anthony A. Conte, Pittsburgh.
Discussion to be opened by Louis J. Hampton, Philadelphia.

Controlled Hypothermia During Operation for Tetralogy of Fallot. B. E. Marbury, New York.
Discussion to be opened by Paul R. Dunke, Detroit.

Polybrene: An Intravenous Heparin-Neutralizing Agent.
William A. Weiss, Janet S. Gilman, and Alfred J. Catenacci, Philadelphia, and Arnold E. Osterberg, North Chicago, Ill.
Discussion to be opened by Louis R. Orkin, New York.

Open Heart Surgery—Anesthesia and Surgical Experiences.
Kenneth K. Keown, Richard A. Gilman, and Charles P. Bailey, Philadelphia.
Discussion to be opened by James F. Hoffman, Cleveland.

Wednesday, June 5—2 p. m.

JOINT MEETING WITH SECTION ON DISEASES OF THE CHEST IN HENRY HUDSON HOTEL, TUDOR ROOM

Symposium on Basic Problems in Thoracic and Cardiovascular Surgery

John W. Kirklin, Rochester, Minn., Moderator.

Theory and Practice in the Evaluation of Pulmonary Function. Richard L. Riley, Baltimore.

The Occurrence of Respiratory Depression and Metabolic Acidosis During Anesthesia for Thoracic Operation. Duncan A. Holaday and E. M. Papper, New York.

The Electrocardiogram and Electroencephalogram in Elective Cardiac Arrest. Donald E. Hale, Cleveland.

Hypoventilation and Hyperventilation in Anesthesia for Thoracic Surgery. C. R. Stephen, Durham, N. C.

Basic Considerations in Surgical Techniques for Intracardiac Surgery. Henry T. Bahnson, Baltimore.

The Consideration of Certain Phenomena Observed During the Use of a Gibbon-Type Pump-Oxygenator. Richard A. Theye, Rochester, Minn.

Questions and discussion from the floor.

Thursday, June 6—9 a. m.

BUSINESS MEETING; ELECTION OF OFFICERS. PLAZA HOTEL, TERRACE ROOM

Chairman's Address. Scott M. Smith, Salt Lake City.

General Orotracheal Anesthesia for Bronchoscopy. James S. Reitman, Laredo, Texas.
Discussion to be opened by Bernard Raymond Fink, New York.

Cardiac and Pulmonary Evaluation in Elderly Patients Before Elective Surgical Operations. William S. Howland, New York.
Discussion to be opened by Ferdinand E. Greifenstein, Detroit.

The Transmission of Cyclopropane Across the Placenta. Virginia Apgar and Stanley James, New York.
Discussion to be opened by John Adriani, New Orleans.

Postoperative Hypotension.
Charles M. Barbour and David M. Little Jr., Hartford, Conn.
Discussion to be opened by F. Paul Ansbro, Brooklyn, N. Y.

Hazards of the Immediate Postoperative Period. Robert D. Dripps, Philadelphia.
Discussion to be opened by Bernard S. Goffen, Great Neck, N. Y.

The Western Reserve Portable Resuscitator, Inhalator and Anesthesia Machine. Robert A. Hingson, Cleveland.
Discussion to be opened by Paul H. Lorhan, Kansas City, Kan.

SECTION ON DERMATOLOGY

MEETS IN HENRY HUDSON HOTEL, TUDOR ROOM

OFFICERS OF SECTION

Chairman—HERBERT RATTNER, Chicago.
Vice-Chairman—FREDERICK M. JACOB, Pittsburgh.
Secretary—CLARENCE S. LIVINGOOD, Detroit.
Delegate—WINFRED A. SHOWMAN, Tulsa, Okla.
Representative to Scientific Exhibit—STANLEY E. HUFF, Evanston, Ill.
Executive Committee—EVERETT C. FOX, Dallas, Texas; J. WALTER WILSON, Los Angeles; DR. RATTNER; DR. LIVINGOOD; and DR. SHOWMAN.

Wednesday, June 5—9 a. m.

BUSINESS MEETING

Chairman's Address: A Consideration of Dermatologic Nomenclature. HERBERT RATTNER, Chicago.

Aids in Early Diagnosis of Tumors About Tip of the Nose.
HARRY H. HAGGART and D. J. A. REBELLO, Cincinnati.
Discussion to be opened by HERBERT L. TRAENKLE, Buffalo.

The Eczematous Complications of the Combined Streptomycin, PAS and Isoniazid Treatment of Tuberculosis.
JOHN T. CRISSEY, EARL D. OSBORNE, and JAMES W. JORDON, Buffalo.
Discussion to be opened by JOHN C. DOWNING, Boston.

The Psychophysiological Concept of Atopic Eczema.
WILLIAM B. GUY and ROBERT J. SHOEMAKER, Pittsburgh.
Discussion to be opened by RAYMOND C. V. ROBINSON, Baltimore.

Lithographer's Dermatitis.
MATTHEW J. BRUNNER, Chicago Heights, Ill., and HARLAN LEVIN, Delavan, Wis.
Discussion to be opened by JOSEPH V. KLAUDER, Philadelphia.

Dysproteinemic Purpura of the Hypergammaglobulinemic Type: Clinical Features and Differential Diagnosis.
GEORGE W. HAMBRICK JR., Philadelphia.
Discussion to be opened by HARVEY BLANK, Miami, Fla.

Thursday, June 6—9 a. m.

BUSINESS MEETING

Hemangiomas, Treated and Untreated.
GEORGE C. ANDREWS, ANTHONY N. DOMONKOS, VICTOR M. TORRES, New York, and JOHN K. BEMBENISTA, Buffalo.
Discussion to be opened by RAYMOND A. OSBOURN, Washington, D. C.

Symposium and Panel Discussion on Pediatric Dermatology

BEATRICE M. KESTEN, New York, Moderator.

Dermatomyositis and Lupus Erythematosus in Childhood.
LOUIS A. BRUNSTING, Rochester, Minn.

A Pediatrician's Viewpoint of Atopic and Seborrheic Dermatitis.
JEROME GLASER, Rochester, N. Y.

Care of the Normal Skin and Treatment of Infections in Children. EARL D. OSBORNE, Buffalo.

Fungus Infection in Children.
E. RICHARD HARRELL, Ann Arbor, Mich.

Discussion and question and answer period. (Questions to be limited to the above subjects.)
LOUIS A. BRUNSTING, Rochester, Minn.; JEROME GLASER, Rochester, N. Y.; EARL D. OSBORNE, Buffalo; E. RICHARD HARRELL, Ann Arbor, Mich.; GEORGE C. ANDREWS, New York; and PAUL GYORGY, Philadelphia.

Friday, June 7—9 a. m.

The Treatment of Pityriasis Rosea with Convalescent Plasma, Gamma Globulin, and Pooled Plasma.
ROLFE W. SALIN, ARTHUR C. CURTIS, and ALBERT H. WHEELER, Ann Arbor, Mich.
Discussion to be opened by DONALD M. PILLSBURY, Philadelphia.

Experimental Production of Acne by Progesterone.
ISRAEL ZELIGMAN, Baltimore, and LOUIS F. HUBENER, Gainesville, Fla.
Discussion to be opened by ALLAN L. LORINCZ, Chicago.

Iodide-Thyroid Therapy of Blastomycosis.
THEODORE CORNBLEET, Chicago.
Discussion to be opened by SIDNEY OLANSKY, Durham, N. C.

Diagnosis and Treatment of Misdiagnosed Dermatoses.
OTIS FIELD JILLSON, Hanover, N. H.
Discussion to be opened by BERNARD APPEL, Boston.

Pemphigus: A Study of 60 Patients from the Dermatologic Wards of Bellevue Hospital from 1950 to 1956.
MAURICE J. COSTELLO, New York, LEON JAIMOVICH, Buenos Aires, and MARVIN DANNENBERG, New York.
Discussion to be opened by J. FRED MULLINS, Galveston, Texas.

The Use of Relaxin in the Treatment of Scleroderma.
GUS G. CASTEN and ROBERT J. BOUCEK, Miami, Fla.
Discussion to be opened by JOHN R. HASERICK, Cleveland.

SECTION ON DISEASES OF THE CHEST

MEETS IN HENRY HUDSON HOTEL, TUDOR ROOM

OFFICERS OF SECTION

Chairman—JOHN F. BRIGGS, St. Paul.
Vice-Chairman—M. JAY FLIPSE, Miami, Fla.
Secretary—BURGESS L. GORDON, Philadelphia.
Delegate—HOLLIS E. JOHNSON, Nashville, Tenn.
Representative to Scientific Exhibit—JOSEPH F. ROSS, Los Angeles.
Executive Committee—ANDREW L. BANYAI, Milwaukee; EDGAR T. MAYER, New York; DR. BRIGGS; DR. GORDON; and DR. JOHNSON.

Tuesday, June 4—2 p. m.

Opening Address: Chronic Bronchitis and Emphysema.
EDGAR T. MAYER, New York.

Panel Discussion on the Treatment of Pulmonary Infections

ARTHUR M. OLSEN, Rochester, Minn., Moderator.

Medical Treatment of Acute Pulmonary Infections.
JOSEPH E. GERACI, Rochester, Minn.

Medical Treatment of Chronic Pulmonary Infections.
SOL KATZ, Washington, D. C.

Surgical Treatment of Acute and Chronic Pulmonary Infections.
ROBERT H. WYLIE, New York.

Physiologic and Mechanical Aids in the Treatment of Pulmonary Infection. ALBERT H. ANDREWS, Chicago.

Symposium on Cardiology: Methods of Examining and Testing

ARTHUR M. MASTER, New York, Moderator.

The Master Two-Step Test in Coronary Artery Disease. HENRY I. RUSSEK, Staten Island, N. Y.
Discussion to be opened by GEORGE P. ROBB, New York.

Vectorcardiographic Diagnosis of Coronary Artery Disease. LOUIS WOLFF, Boston.
Discussion to be opened by DAVID LITTMANN, West Roxbury, Mass.

Roentgenoscopy and Roentgenkymography in Coronary Artery Disease. SIMON DACK, New York.
Discussion to be opened by ALDO A. LUISADA, Chicago.

The Electrocardiogram in Coronary Artery Disease. GEORGE E. BURCH, New Orleans.
Discussion to be opened by WILLIAM H. LEWIS JR., New York.

Changes in Muscle Enzymes, ESR and C-Reactive Protein in Coronary Disease. JOHN S. LA DUE, New York.

Wednesday, June 5—1:30 p. m.

BUSINESS MEETING

JOINT MEETING WITH SECTION ON ANESTHESIOLOGY
IN HENRY HUDSON HOTEL, TUDOR ROOM

Symposium on Basic Problems in Thoracic and Cardiovascular Surgery

JOHN W. KIRKLIN, Rochester, Minn., Moderator.

Theory and Practice in the Evaluation of Pulmonary Function. RICHARD L. RILEY, Baltimore.

The Occurrence of Respiratory Depression and Metabolic Acidosis During Anesthesia for Thoracic Operation. DUNCAN A. HOLADAY and E. M. PAPPER, New York.

The Electrocardiogram and Electroencephalogram in Elective Cardiac Arrest. DONALD E. HALE, Cleveland.

Hypoventilation and Hyperventilation in Anesthesia for Thoracic Surgery. C. R. STEPHEN, Durham, N. C.

Basic Considerations in Surgical Techniques for Intracardiac Surgery. HENRY T. BAHNSON, Baltimore.

The Consideration of Certain Phenomena Observed During the Use of a Gibbon-Type Pump Oxygenator. RICHARD A. THEYE, Rochester, Minn.

Questions and discussion from the floor.

Thursday, June 6—2 p. m.

JOINT SESSION WITH THE SECTION ON RADIOLOGY IN
HENRY HUDSON HOTEL, BALLROOM

Panel Discussion on Bronchoesophageal Problems

J. PAUL MEDELMAN, St. Paul, Moderator.

Internist. REGINALD H. SMART, Los Angeles.

Radiologists.
JOHN F. HOLT, Ann Arbor, Mich., and PAUL C. SWENSON, Philadelphia.

Endoscopist. PAUL H. HOLINGER, Chicago.

Surgeon. T. J. KINSELLA, Minneapolis.

Panel Discussion on Cardiac Tumors and Allied Conditions

ANDRE BRUWER, Rochester, Minn., Moderator.

Internist. F. MASON SONES JR., Cleveland.

Radiologists.
EUGENE P. PENDERGRASS, Philadelphia, and WENDELL G. SCOTT, St. Louis.

Surgeons.
DWIGHT E. HARKEN, Boston, and JOHN W. KIRKLIN, Rochester, Minn.

SECTION ON EXPERIMENTAL MEDICINE AND THERAPEUTICS

MEETS IN THE PLAZA HOTEL, BALLROOM

OFFICERS OF SECTION

Chairman—HARRY F. DOWLING, Chicago
Vice-Chairman—GEORGE E. BURCH, New Orleans.
Secretary—ELLIOT V. NEWMAN, Nashville, Tenn.
Delegate—EDGAR V. ALLEN, Rochester, Minn.
Representative to Scientific Exhibit—JOSEPH F. ROSS, Los Angeles.
Executive Committee—HUGH R. BUTT, Rochester, Minn.; THOMAS FINDLEY, Augusta, Ga.; DR. DOWLING; DR. NEWMAN; and DR. ALLEN.

Tuesday, June 4—2 p. m.

Chairman's Address HARRY F. DOWLING, Chicago

George Minot Lecture: The Search for an Experimental Counterpart of Pernicious Anemia. MAXWELL M. WINTROBE, Salt Lake City.

Symposium on Urinary Tract Infection

Pathogenesis of Renal Infection. GEORGE G. JACKSON, Chicago.
Discussion to be opened by ROBERT M. KARK, Chicago.

Antimicrobial Therapy of Urinary Tract Infection. VERNON KNIGHT, Nashville, Tenn.
Discussion to be opened by DAVID E. ROGERS, New York.

Diagnosis of Active Infections of the Urinary Tract. EDWARD H. KASS, Boston.
Discussion to be opened by EDWIN L. PRIEN, Brookline, Mass.

Wednesday, June 5—2 p. m.

BUSINESS MEETING; ELECTION OF OFFICERS

Symposium on Adenoviruses

Properties of the Adenoviruses. WALLACE P. ROWE, Bethesda, Md.
Discussion to be opened by JOHN P. UTZ, Bethesda, Md.

Epidemiology of Adenoviruses. JOSEPH A. BELL, Bethesda, Md.
Discussion to be opened by ALEXANDER LANGMUIR, Atlanta, Ga.

Vaccination Against Adenovirus Infections. M. R. HILLEMAN, Washington, D. C.
Discussion to be opened by JOHN R. SEAL, Washington, D. C.

Clinical Syndromes Produced by Adenoviruses. R. J. HUEBNER, Bethesda, Md.
Discussion to be opened by ROBERT AUSTRIAN, Brooklyn, N. Y.

Occurrence of Adenovirus Infections in Civilian Populations.
WILLIAM S. JORDAN JR., Cleveland.
Discussion to be opened by CLAYTON G. LOOSLI, Chicago.

Thursday, June 6—2 p. m.

JOINT MEETING WITH SECTION ON INTERNAL MEDICINE
IN THE PLAZA HOTEL, BALLROOM

Symposium on the Use of Androgens and Estrogens and Their Metabolic Effects

A Review of the Prolonged Use of Estrogens and Androgens in Osteoporosis. PHILIP H. HENNEMAN, Boston.
Discussion to be opened by J. WILLIAM HILLMAN, Nashville, Tenn.

Observations on the Role of Androgens and Estrogens on Body Balance. OLOF H. PEARSON, New York
Discussion to be opened by RAYMOND WESTON, New York.

Steroid Therapy for Abnormalities of Androgen in Virilizing Adrenal Hyperplasia. ROBERT M. BLIZZARD, Baltimore.
Discussion to be opened by GEORGE ESCHER, New York.

The Effects of Estrogens on Serum Lipids.
ROGER W. ROBINSON, N. HIGANO, and W. D. COHEN, Worcester, Mass.
Discussion to be opened by ALFRED STEINER, New York.

Experimental Basis for Anabolic Therapy.
GILBERT S. GORDAN, San Francisco.
Discussion to be opened by JOHN M. BEAL, New York.

SECTION ON GASTROENTEROLOGY AND PROCTOLOGY

MEETS IN COLISEUM, ROOM 4, 4TH FLOOR

OFFICERS OF SECTION

Chairman—ROBERT A. SCARBOROUGH, San Francisco.
Vice-Chairman—EVERETT D. KIEFER, Boston.
Secretary—WILLIAM H. DEARING, Rochester, Minn.
Delegate—STUART T. ROSS, Garden City, N. Y.
Representatives to Scientific Exhibit—GEORGE GORDON MCHARDY, New Orleans, and WILLARD H. BERNHOFT, Buffalo.
Executive Committee—HARRY E. BACON, Philadelphia; LOWELL D. SNORF, Evanston, Ill.; DR. SCARBOROUGH; DR. DEARING; and DR. ROSS.

Wednesday, June 5—9 a. m.

Symposium on Hepatitis

Etiology and Epidemiology Hepatitis.
W. PAUL HAVENS, JR., Philadelphia.

Pathologic Anatomy Hepatitis.
ARCHIE H. BAGGENSTOSS, Rochester, Minn.

Clinical Course and Diagnosis Hepatitis.
RICHARD D. ECKHARDT, Iowa City.

Posthepatitic Cirrhosis. OSCAR D. RATNOFF, Cleveland.

Management of Hepatitis. JOHN R. NEEFE, St. Petersburg, Fla.

Panel Discussion on Hepatitis

JOHN R. NEEFE, St. Petersburg, Fla., Moderator.

Participants: W. PAUL HAVEN: JR., Philadelphia; ARCHIE H. BAGGENSTOSS, Rochester, Minn.; RICHARD D. ECKHARDT, Iowa City; and OSCAR D. RATNOFF, Cleveland.

Thursday, June 6—9 a. m.

ELECTION OF OFFICERS

Chairman's Address: The Significance of Rectal Bleeding in Diverticulosis and Diverticulitis of the Colon.
ROBERT A. SCARBOROUGH, San Francisco.

Symposium on Regional Enteritis

Diagnosis and Clinical Course. E. N. COLLINS, Cleveland.
Pathologic Anatomy. THOMAS C. LAIPPLY, Chicago.
Medical Management. J. A. BARGEN, Rochester, Minn.
Surgical Management. L. K. FERGUSON, Philadelphia

Panel Discussion on Regional Enteritis

J. A. BARGEN (internist), Rochester, Minn., Moderator.

Participants: E. N. COLLINS (internist), Cleveland; THOMAS C. LAIPPLY (pathologist), Chicago; L. K. FERGUSON (surgeon), Philadelphia; F. E. TEMPLETON (radiologist), Seattle; and ALEJANDRO F. CASTO (proctologist), Washington, D. C.

Friday, June 7—a. m.

JOINT MEETING WITH SECTION ON PATHOLOGY AND PHYSIOLOGY
IN COLISEUM, ROOM 4, 4TH FLOOR

Panel Discussion on Cancer of the Gastrointestinal Tract

ROBERT M. ZOLLINGER, Columbus, Ohio, Moderator.

Participants: BENJAMIN CASTLEMAN and J. ENGLEBERT DUNPHY, Boston; WALTER L. PALMER, Chicago; MARVIN POLLARD, Ann Arbor, Mich.; ISADOR RAVDIN, Philadelphia; and ARTHUR PURDY STOUT, New York.

SECTION ON GENERAL PRACTICE

MEETS IN HENRY HUDSON HOTEL, BALLROOM

OFFICERS OF SECTION

Chairman—GEORGE L. THORPE, Wichita, Kan.
Vice-Chairman—CHARLES E. MCARTHUR, Olympia, Wash.
Secretary—E. I. BAUMGARTNER, Oakland, Md.
Delegate—LESTER D. BIBLER, Indianapolis.
Representative to Scientific Exhibit—I. PHILLIPS FROHMAN, Washington, D. C.
Executive Committee—LOWRY H. MCDANIEL, Tyronza, Ark.; I. PHILLIPS FROHMAN, Washington, D. C.; DR. THORPE; DR. BAUMGARTNER; and DR. BIBLER.

Tuesday, June 4—1:45 p. m.

BUSINESS MEETING; INTRODUCTION OF RESOLUTIONS;
REPORT OF DELEGATE.

Chairman's Address: Treating Our Overweight Patients.
GEORGE L. THORPE, Wichita, Kan.

Panel and Symposium on the Uses and Abuses of New Drugs and Antibiotics in Therapy

WALTER MODELL, New York, Moderator.

General Statements on Therapy. WALTER C. ALVAREZ, Chicago.
Corticosteroids. WILLIAM DOCK, Menlo Park, Calif.
Tranquilizers. DALE G. FRIEND, Boston.
Drug Mixtures. CLAUDE E. FORKNER, New York.
Hypotensive Drugs. S. W. HOOBLER, Ann Arbor, Mich.
Antibiotics. CHESTER S. KEEFER, Boston.

Wednesday, June 5—1:50 p. m.

BUSINESS MEETING; ELECTION OF OFFICERS

Problem of Hiatus Hernia.
ALFRED KAHN JR. and THOMAS PAUL THOMPSON, Little Rock, Ark.

Obstetrical Anesthesia and Analgesia in General Practice.
JOHN J. BONICA, Tacoma, Wash.

Current Practical Gynecology. WALTER J. REICH, Chicago.

Management of Disorders Causing Chronic Abdominal Pain.
KEITH S. GRIMSON, Durham, N. C.

Clinical Significance of the Anniversary Reaction.
EDWARD WEISS, Philadelphia.

Diagnosis and Treatment of Facial Pain.
GEORGE W. SMITH, Augusta, Ga.

Normal Blood Pressure in Healthy Persons from Youth to Old Age.
ARTHUR M. MASTER, RICHARD P. LASSER, and HARRY L. JAFFE, New York.

Functional Hyperinsulinism in General Practice.
STEPHEN P. GYLAND, Jacksonville, Fla.

Bedside Clues in the Diagnosis of Cardiovascular Disease: Examination Without Instrumentation.
JACOB J. SILVERMAN, Staten Island, N. Y.

Friday, June 7—9 a. m.

JOINT MEETING WITH SECTION ON UROLOGY IN ESSEX HOUSE, COLONNADES

Clinical Significance of Hematuria.
CHARLES C. HIGGINS, Cleveland.

Pitfalls in Urographic Interpretations. M. SWICK, New York.

The Diagnosis of Renal Disease from the Urine Sediment.
ARNOLD S. RELMAN, Boston.

Medical and Surgical Management of Undescended Testicle and Other Scrotal Conditions. NORRIS J. HECKEL, Chicago.

Premature Ejaculation: a Physiological Approach.
JAMES H. SEMANS, Durham, N. C.

Diseases of the Female Urethra. HOUSTON S. EVERETT, Baltimore

Panel Discussion and Question and Answer Period from the Audience. RUBIN H. FLOCKS, Iowa City, Moderator.

SECTION ON INTERNAL MEDICINE

MEETS IN THE PLAZA HOTEL, BALLROOM

OFFICERS OF SECTION

Chairman—A. CARLTON ERNSTENE, Cleveland.
Vice-Chairman—PAUL B. BEESON, New Haven, Conn.
Secretary—RUDOLPH H. KAMPMEIER, Nashville, Tenn.
Delegate—CHARLES T. STONE SR., Galveston, Texas.
Representative to Scientific Exhibit—HENRY T. RICKETTS, Chicago.
Executive Committee—HOWARD P. LEWIS, Portland, Ore.; HENRY M. THOMAS JR., Baltimore; DR. ERNSTENE; DR. KAMPMEIER; and DR. STONE.

Wednesday, June 5—9 a. m.

Hirsuitism.
WILLIAM H. PERLOFF, HARRY E. HADD, BERTRAM J. CHANNICK, and JOHN H. NODINE, Philadelphia.
Discussion to be opened by ALBERT SEGALOFF, New Orleans.

Vitamin B_{12} in Internal Medicine.
RICHARD W. VILTER, LEO WAYNE, BEN T. FRIEDMAN, and LOUIS S. BECKER, Cincinnati.
Discussion to be opened by CHARLES S. DAVIDSON, Boston.

The Billings Lecture: Rheumatic Heart Disease in Pregnancy.
C. SIDNEY BURWELL, Boston.

The Use of Radioactive Fat in the Study of Absorption in Various Disease States.
DONALD BERKOWITZ and DAVID SKLAROFF, Philadelphia.
Discussion to be opened by GEORGE V. MANN, Boston.

The Non-Rheumatoid Connective Tissue Disorders.
JOHN H. TALBOTT, Buffalo.
Discussion to be opened by JOHN R. HASERICK, Cleveland.

The Use of Radioisotope Techniques in Clinical Hematology.
PHILLIP C. JOHNSON, R. M. BIRD, and W. L. HUGHES, Oklahoma City.
Discussion to be opened by CHARLES E. RATH JR., Washington, D. C.

Thursday, June 6—9 a. m.

ELECTION OF OFFICERS.

The Value of Continuous Long Term Anticoagulant Therapy.
BENJAMIN MANCHESTER, Washington, D. C.
Discussion to be opened by JOSEPH B. VANDER VEER, Philadelphia.

Arteriosclerosis and Renal Hypertension: Indications for Aortography in Hypertensive Patients and Results of Surgical Treatment of Renal Artery Obstructive Lesions.
EUGENE F. POUTASSE and HARRIET P. DUSTAN, Cleveland.
Discussion to be opened by ROBERT M. KARK, Chicago.

Clinical Implications of Excessive Secretion of Aldosterone.
JOHN A. LUETSCHER JR., and AMOS H. LIEBERMAN, San Francisco.
Discussion to be opened by JOHN BECK, Montreal.

Chairman's Address: Explaining to the Patient: A Therapeutic Tool and a Professional Obligation.
A. CARLTON ERNSTENE, Cleveland.

Panel Discussion on the Use of Drugs in Heart Disease
IRVING S. WRIGHT, New York, Moderator.

Participants: CHARLES K. FRIEDBERG, New York; SAMUEL A. LEVINE, Boston; H. M. MARVIN, New Haven, Conn., and CARTER SMITH, Atlanta, Ga.

Thursday, June 6—2 p. m.

JOINT MEETING WITH SECTION ON EXPERIMENTAL MEDICINE AND THERAPEUTICS IN THE PLAZA HOTEL, BALLROOM

Symposium on the Use of Androgens and Estrogens and Their Metabolic Effects

A Review of the Prolonged Use of Estrogens and Androgens in Osteoporosis. PHILIP H. HENNEMAN, Boston.
Discussion to be opened by J. WILLIAM HILLMAN, Nashville, Tenn.

Observations on the Role of Androgens and Estrogens on Body Balance. OLOF H. PEARSON, New York.
Discussion to be opened by RAYMOND WESTON, New York.

Steroid Therapy for Abnormalities of Androgen in Virilizing Adrenal Hyperplasia. ROBERT M. BLIZZARD, Baltimore.
Discussion to be opened by GEORGE ESCHER, New York.

The Effects of Estrogens on Serum Lipids.
ROGER W. ROBINSON, N. HIGANO, and W. D. COHEN, Worcester, Mass.
Discussion to be opened by ALFRED STEINER, New York.

Experimental Basis for Anabolic Therapy.
GILBERT S. GORDAN, San Francisco.
Discussion to be opened by JOHN M. BEAL, New York.

SECTION ON LARYNGOLOGY, OTOLOGY, AND RHINOLOGY

MEETS IN THE PARK SHERATON, BALLROOM

OFFICERS OF SECTION

Chairman—GORDON D. HOOPLE, Syracuse, N. Y.
Vice-Chairman—KENNETH L. CRAFT, Indianapolis.
Secretary—HUGH A. KUHN, Hammond, Ind.
Delegate—GORDON F. HARKNESS, Davenport, Iowa.
Representative to Scientific Exhibit—WALTER E. HECK, San Francisco.
Executive Committee—FRANCIS W. DAVISON, Danville, Pa.; JOHN R. LINDSAY, Chicago; DR. HOOPLE; DR. KUHN; and DR. HARKNESS.

Tuesday, June 4—2 p. m.

Honorary Chairman's Address. JULIUS LEMPERT, New York.

Two Case Reports

1. Elongated Styloid Process. GUY OWSLEY, Hartford City, Ind.

2. New Tracheotomy Tube. RALPH J. CAPAROSA, Pittsburgh.

Sudden Deafness. O. ERIK HALLBERG, Rochester, Minn.
Discussion to be opened by WESLEY BRADLEY, Syracuse, N. Y.

Monocystic Fibrous Dysplasia of the Maxillary Sinuses.
JOSE PICO, Santurce, Puerto Rico.
Discussion to be opened by DANIEL C. BAKER JR., New York.

Symposium on Virus Infections.

Laboratory Side of Virus Disease of the Respiratory Tract.
S. S. KALTER, Montgomery, Ala.

Diagnosis Side of Virus Diseases.
ALBERT P. MCKEE, Iowa City.

Chemical Side of Virus Diseases.
HARRY P. SCHENCK, Philadelphia.

Wednesday, June 5—2 p. m.

Two Case Reports

1. Correction of the Nasal Tip in Rhinoplasty.
SAMUEL M. BLOOM, New York.

2. Nasal and Laryngeal Involvement in Abdominal Hodgkin's Disease. HERBERT A. LAUTZ, Hammond, Ind.

The Diagnostic Significance of Fullness in the Ear.
VICTOR R. ALFARO, Washington, D. C.
Discussion to be opened by BENJAMIN H. SHUSTER, Philadelphia.

Chairman's Address: GORDON D. HOOPLE, Syracuse, N. Y.

Symposium on Headache

Vascular Headache. HENRY D. OGDEN, New Orleans.

Cerebral Headache. STANLEY BATKIN, Syracuse, N. Y.

ENT Side of Headache. RAYMOND L. HILSINGER, Cincinnati.

BUSINESS MEETING

Thursday, June 6—2 p. m.

Case Report: An Unusual Foreign Body in the Bronchus.
WALTER E. OWEN, Peoria, Ill.

Diseases of the Salivary Gland.
ROBERT S. MARTIN, Zanesville, Ohio.

Tumors of Sinuses and Orbit.
S. GORDON CASTIGLIANO, Philadelphia.
Discussion to be opened by JOHN J. CONLEY, New York, and KENNETH DEVINE, Rochester, Minn.

Symposium on Therapy in Otolaryngology

Cortico-Steroids in Otolaryngology.
LOUIS E. SILCOX, Philadelphia.

General Therapy in Otolaryngology.
HERMAN Z. SEMENOV, Beverly Hills, Calif.

SECTION ON MILITARY MEDICINE

MEETS IN COLISEUM, ROOM 1, 2ND FLOOR

OFFICERS OF SECTION

Chairman—RUSSELL V. LEE, Palo Alto, Calif.
Vice-Chairman—SILAS B. HAYS, Washington, D. C.
Secretary—CECIL L. ANDREWS, Washington, D. C.
Delegate—CHARLES L. LEEDHAM, Cleveland.
Representative to Scientific Exhibit—FRANK M. TOWNSEND, Washington, D. C.
Executive Committee—I. S. RAVDIN, Philadelphia; H. LAMONT PUGH, Bethesda, Md.; DR. LEE; DR. ANDREWS; and DR. LEEDHAM.

Tuesday, June 4—2 p. m.

Chairman's Address: The Military Surgeon—A Specialist.
RUSSELL V. LEE, Palo Alto, Calif.

Navy Medicine and the Nuclear Age.
JOHN H. EBERSOLE, U.S.S. Sea Wolf.
Discussion to be opened by RALPH M. LECHAUSSE, Washington, D. C.

Experimental Studies of Prophylactic Antibiotics for Mass Casualty Care.
JAY P. SANFORD, Durham, N. C., HINTON J. BAKER and CARL W. HUGHES, Washington, D. C.
Discussion to be opened by WILLIAM A. ALTEMEIER, Cincinnati.

Duty After Polyethylene Cranioplasty.
DALE G. CLARK, Oakland, Calif.
Discussion to be opened by WILLIAM T. SPENCE and GEORGE J. HAYES, Washington, D. C.

Prevention of Heat Casualties.
DAVID MINARD, Bethesda, Md.; HARWOOD S. BELDING, Pittsburgh; and JAMES R. KINGSTON, Washington, D. C.
Discussion to be opened by C. P. YAGLOU, Boston, and WILLIAM D. GRAHAM, Fort Jackson, S. C.

Wednesday, June 5—2 p. m.

BUSINESS MEETING; ELECTION OF OFFICERS.

Return to Duty of Military Personnel Treated for Pulmonary Tuberculosis.
JAMES A. WIER and CARL W. TEMPEL, Denver.
Discussion to be opened by JOHN F. CHACE, Washington, D. C.

Dependents' Medical Care.
PAUL I. ROBINSON, Washington, D. C.
Discussion to be opened by GUY E. STAHR and KENNETH R. NELSON, Washington, D. C.

Penicillinase Treatment of Penicillin Reactions.
GEORGE M. DAVIS, Great Lakes, Ill., C. G. LOOSLI, and G. H. STOLERMAN, Chicago.
Discussion to be opened by ROBERT M. BECKER, Madison, Wis.

Department of Defense Activities, Health and Medical Section, During Past Year. FRANK B. BERRY, Washington, D. C.

A Psychiatric Therapeutic Community in a Naval Hospital.
HARRY A. WILMER, Bethesda, Md.
Discussion to be opened by FRANCIS J. BRACELAND, Hartford, Conn., and DAVID MCK. ROCH, Washington, D. C.

Opportunity in Military Medicine.
LARRY A. SMITH, Washington, D. C.
Discussion to be opened by CHARLES L. LEEDHAM, Cleveland.

Thursday, June 6—2 p. m.

Military Aspects of Underweight and Overweight.
ALBERT R. BEHNKE JR., San Francisco.
Discussion to be opened by J. MURRAY STEELE, New York, and H. T. E. HERTZBERG, Dayton, Ohio.

The Future of Hemodialysis in Military Medicine.
PAUL E. TESCHAN and CHARLES R. BAXTER, Fort Sam Houston, Texas.
Discussion to be opened by WILLIAM J. KOLFF, Cleveland, and PAUL D. DOOLAN, Oakland, Calif.

The Problems of Residency Training.
I. S. RAVDIN, Philadelphia.

Metabolic and Nutritional Changes Associated with Injury.
HAROLD L. UPJOHN and STANLEY M. LEVENSON, Washington, D. C.
Discussion to be opened by JAMES T. WORTHAM, Portsmouth, Va.

Air Mobile Disaster Assistance Unit.
PAUL C. SHELDON, Donaldson Air Force Base, S. C.
Discussion to be opened by JOHN M. WHITNEY, Battle Creek, Mich.

SECTION ON MISCELLANEOUS TOPICS

Session on Allergy

MEETS IN COLISEUM, ROOM 3, 3RD FLOOR

OFFICERS OF SESSION

Co-Chairman—CARL E. ARBESMAN, Buffalo, and ETHAN ALLAN BROWN, Boston.
Secretary—CLARENCE BERNSTEIN, Orlando, Fla.

Wednesday, June 5—2 p. m.

Allergy Has Come of Age. LEO H. CRIEP, Pittsburgh.

Principles of Management of Allergic Disorders with Metisteroids with Emphasis Upon Clinical and Laboratory Control of Complications. SAMUEL C. BUKANTZ, St. Louis.

The Status of Corticotropin and the Steroid Hormones in the Therapy of Allergic Disease.
RALPH BOOKMAN, Beverly Hills, Calif.

Prednisone in the Treatment of Allergy in Children.
SAMUEL J. LEVIN and PHILIP ADLER, Detroit.

The Concept of Allergy in Relation to Atopic Dermatitis.
MAX GROLNICK, Brooklyn.

Management of Allergic Eczema. LOUIS TUFT, Philadelphia.

Milk Allergy—Diagnostic Aspects and the Role of Milk Substitutes. JOSEPH H. FRIES, New Hyde Park, N. Y.

Smoking and Chronic Respiratory Disorders: Results of Abstinence.
OSCAR SWINEFORD JR. and LESZEK OCHOTA, Charlottesville, Va.

Psychosomatic Aspects of Allergy in Childhood.
HOWARD G. RAPAPORT, New York.

Bronchial Asthma in Children and Adults Treated by the Prophylactic Use of an Iodide Containing Bronchodilator Drug. BERNARD T. FEIN, San Antonio, Texas.

Allergic Reactions to Tetanus Toxoid, Diphtheria and Tetanus Toxoids and Pertussis Vaccine, and Human Gamma Globulin.
MONROE COLEMAN, Stamford, Conn., and SPENCER F. BROWN, Darien, Conn.

Session on Legal Medicine

MEETS IN HENRY HUDSON HOTEL, TUDOR ROOM

OFFICERS OF SESSION

Chairman—HERMAN A. HEISE, Milwaukee.
Secretary—ALEXANDER S. WIENER, Brooklyn.

Thursday, June 6—2 p. m.

Chemical Tests for Intoxication.
HERMAN A. HEISE, Milwaukee.

Mock Trial Demonstration

Expert Medical Witness.
RALPH E. DE FOREST, Secretary, Council on Medical Physics, American Medical Association, Chicago.

Police Technician.
CAPT. ROBERT F. BORKENSTEIN, Indiana State Police, Indianapolis.

Defendant.
WARREN E. WHYTE, Law Department, American Medical Association Chicago.

Prosecuting Attorney.
EDWIN J. HOLMAN, Law Department, American Medical Association, Chicago.

Defense Attorney.
WILLIAM J. MCAULIFFE JR., Law Department, American Medical Association, Chicago.

Judge.
C. JOSEPH STETLER, Director, Law Department, American Medical Association, Chicago.

Session on Medical Communication

MEETS IN COLISEUM, ROOM 3, 3RD FLOOR

OFFICERS OF SESSION

Chairman—ELBERT DE COURSEY, Fort Sam Houston, **Texas.**
Secretary—COYE C. MASON, Chicago.

Tuesday, June 4—2 p. m.

Panel Discussion on Methods of Medical Communication

ELBERT DE COURSEY, Fort Sam Houston, Texas, Moderator.

Participants: ARTHUR BULBULIAN, Rochester, Minn.; MORRIS FISHBEIN, Chicago; J. EDWIN FOSTER, Chicago; RICHARD M. HEWITT, Rochester, Minn.; TOM JONES, Chicago; EDWIN P. JORDAN, Charlottesville, Va.; and PHILIP THOREK, Chicago.

Panel members will discuss the various mediums used in communicating knowledge and methods whereby physicians may improve their presentations in these fields. The subjects covered will be as follows:

Spoken Word.
Written Word.
Preparation and Use of Lantern Slides.
Preparation and Demonstration of Scientific Exhibits.
Proper Use of the Microphone.
Place of the Motion Picture.
Participation in Televison Programs.

Ample opportunity will be given for questions and **for audience** participation.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN ESSEX HOUSE COLONNADES

OFFICERS OF SECTIONS

Chairman—KARL O. VON HAGEN, Los Angeles.
Vice-Chairman—FRANK H. MAYFIELD, Cincinnati.
Secretary—ADOLPH L. SAHS, Iowa City.
Delegate—FRANCIS M. FORSTER, Washington, D. C.
Representative to Scientific Exhibit—BENJAMIN BOSHES, Chicago.
Executive Committee—FRANCIS J. BRACELAND, Hartford, Conn.; LEE M. EATON, Rochester, Minn.; DR. VON HAGEN; DR. SAHS; and DR. FORSTER.

Tuesday, June 4—2 p. m.

Survey of Cervical Disc Lesions.
GUY L. ODOM, BARNES WOODHALL, and WILLIAM FINNEY, Durham, N. C.
Discussion to be opened by WILLIAM B. SCOVILLE, Hartford, Conn., and FRANK H. MAYFIELD, Cincinnati.

Recent Developments in the Treatment of Pituitary Adenomas.
GILBERT HORRAX, Boston.
Discussion to be opened by BRONSON S. RAY, New York, and E. S. GURDJIAN, Detroit.

Pseudotumor Cerebri. (Benign Intracranial Hypertension.)
LEO M. DAVIDOFF, New York.
Discussion to be opened by EMANUEL H. FEIRING, New York, and F. C. GRANT, Philadelphia.

The Relationship of Hydrocephalus to Myelomeningocele and to Hydromyelia.
W. JAMES GARDNER, Cleveland.
Discussion to be opened by JOHN E. SCARFF, New York.

The Clinical Significance of Low Cerebrospinal Fluid Pressure.
HENRY A. SHENKIN and BERNARD E. FINNESON, Philadelphia.
Discussion to be opened by HAROLD G. WOLFF, New York, and J. PETER MURPHY, Washington, D. C.

Gliomas of the Optic Nerves.
HENRY W. DODGE JR., J. GRAFTON LOVE, WINCHELL MCK. CRAIG, MALCOLM B. DOCKERTY, THOMAS P. KEARNS, COLIN B. HOLMAN, and ALVIN B. HAYLES, Rochester, Minn.
Discussion to be opened by A. EARL WALKER, Baltimore.

Wednesday, June 5—2 p. m.

ELECTION OF OFFICERS.

Chairman's Address: KARL O. VON HAGEN, Los Angeles.

Postural Myoneuralgia: Integration of the Acroparesthesia Syndromes. DONALD A. JOHNSON, Washington, D. C.
Discussion to be opened by LEE M. EATON, Rochester, Minn., and TIFFANY LAWYER JR., New York.

The Current Status of the Use of Anticoagulant Drugs in the Treatment of Cerebral Infarction.
C. H. MILLIKAN, R. G. SIEKERT, and J. P. WHISNANT, Rochester, Minn.
Discussion to be opened by IRVING S. WRIGHT and H. HOUSTON MERRITT, New York.

Cerebrospinal Fluid Glutamic Oxalacetic Transaminase (GOT) and Lactic Acid Dehydrogenase (LDH) Activities in Neurologic Diseases.
JOSEPH B. GREEN, HENRY A. OLDEWURTEL, DESMOND S. O'DOHERTY, and FRANCIS M. FORSTER, Washington, D. C.
Discussion to be opened by HEINRICH WAELSCH, New York.

The Comparative Effects of Methocarbamol (a new Lissive Drug), Equanil (Miltown) and Flexin on Human Skeletal Muscle Hyperactivity. FRANCIS A. VAZUKA, Richmond, Va.
Discussion to be opened by WALTER O. KLINGMAN, Charlottesville, Va., and ROBERT WILLIAMS, Washington, D. C.

Functional Hyperinsulinism as a Major Cause of Neuro-Psychiatric Illness. HARRY M. SALZER, Cincinnati.
Discussion to be opened by BENJAMIN H. BALSER, New York.

Migraine and Seizure States in Children.
CARY SUTER, WALTER O. KLINGMAN, HARRY AUSTIN, and O. W. LACY, Charlottesville, Va.
Discussion to be opened by FRANCIS M. FORSTER, Washington, D. C., and EDMUND C. BURKE, Rochester, Minn.

Thursday, June 6—2 p. m.

The Delinquent Child and the Family Doctor.
HARRY R. BRICKMAN, Los Angeles.
Discussion to be opened by HAROLD W. LOVELL, New York.

Clinical Aspects of Sensory Deprivation.
P. HERBERT LEIDERMAN, JACK H. MENDELSON, DONALD WEXLER, and PHILIP SOLOMON, Boston.
Discussion to be opened by WM. B. TERHUNE, New Canaan, Conn., and LAWRENCE C. KOLB, New York.

The Use of Citrated Calcium Carbimide (Temposil) in the Treatment of Chronic Alcoholism.
JACKSON A. SMITH, JACK A. WOLFORD, MARILYN WEBER, and DOUGALD MCLEAN, Omaha.
Discussion to be opened by MERRITT W. FOSTER JR., Richmond, Va.

The Therapeutic Effect of Hospital Culture on Chronic Schizophrenia.

GARFIELD TOURNEY, ROBERT GLEN, H. WARREN DUNHAM, RITA SENF, and J. S. GOTTLIEB, Detroit.

Discussion to be opened by PAUL H. HOCH, New York.

The Results of Treatment of Psychotic States With Newer Phenothiazine Compounds Effective in Small Doses.

DOUGLAS GOLDMAN, Cincinnati.

Discussion to be opened by HERMAN C. B. DENBER, New York.

The Reduction of Psychiatric Symptoms by Short-Term Psychotherapy and by Placebo Medication.

LESTER H. GLIEDMAN, EARL H. NASH JR., STANLEY D. IMBER, ANTHONY R. STONE, and JEROME D. FRANK, Baltimore.

Discussion to be opened by HENRY K. BEECHER, Boston, and WILLIAM S. LANGFORD, New York.

SECTION ON OBSTETRICS AND GYNECOLOGY

MEETS IN HENRY HUDSON HOTEL, BALLROOM

OFFICERS OF SECTION

Chairman—D. FRANK KALTREIDER, Baltimore.

Vice-Chairman—WOODARD D. BEACHAM, New Orleans.

Secretary—KEITH P. RUSSELL, Los Angeles.

Delegate—RALPH E. CAMPBELL, Madison, Wis.

Representative to Scientific Exhibit—FREDERICK H. FALLS, River Forest, Ill.

Executive Committee—FREDERICK H. FALLS, River Forest, Ill.; FRANK R. LOCK, Winston-Salem, N. C.; DR. KALTREIDER; DR. RUSSELL; and DR. CAMPBELL.

Wednesday, June 5—9 a. m.

The Use of Newer Progestins in the Treatment of Pelvic Endometriosis. ROBERT W. KISTNER, Brookline, Mass.

Arborization of Cervical Mucus: An Aid in Diagnosis. ISADOR FORMAN, Philadelphia.

Uroflowmetric Observations in Gynecologic Patients.

WALTER P. PETER JR., and WILLARD M. DRAKE JR., Camden, N. J.

INTERMISSION

Valvuloplasty for Mitral Stenosis During Pregnancy.

WARREN J. TAYLOR, HARRISON BLACK, WENDELL B. THROWER, and DWIGHT E. HARKEN, Boston.

The Obstetrician's Role in Post-Partum Mental Illness.

CURTIS T. PROUT, MARY ALICE WHITE, CARL FIXSEN, and MARVIN FOUNDEUR, White Plains, N. Y.

Chairman's Address: The Breech and Cesarean Section. D. FRANK KALTREIDER, Baltimore.

Thursday, June 6—9 a. m.

JOINT SESSION WITH THE SECTION ON PEDIATRICS IN HENRY HUDSON HOTEL, BALLROOM

Panel Discussion on Postmaturity

NICHOLAS J. EASTMAN, Baltimore, Moderator.

Participants: STEWART H. CLIFFORD, Boston; SCHUYLER KOHL, Brooklyn, N. Y.; and ROBERT E. L. NESBITT JR., Albany, N. Y.

Panel Discussion on Pulmonary Hyaline Membrane Disease

CHARLES C. CHAPPLE, Washington, D. C., Moderator

Participants: PAUL D. BRUNS, Denver, and PETER GRUENWALD, Jersey City, N. J.

Friday, June 7—9 a. m.

BUSINESS MEETING; ELECTION OF OFFICERS

Prediabetes Associated with Pregnancy. ELSIE R. CARRINGTON, Philadelphia.

Rupture of the Marginal Sinus of the Placenta. JAMES HENRY FERGUSON, Miami, Fla.

Instrumental Methods in the Evaluation of Intrauterine Fetal Environment.

RICHARD LEE BERNSTINE, WINSLOW J. BORKOWSKI, and EDWARD M. SOUTHERN, St. Albans, L. I., N. Y.

Surgical Complications of Pregnancy. ROBERT H. BARTER, Washington, D. C.

INTERMISSION

Screening of the Female Population of Floyd County Georgia for Cervical Carcinoma. H. E. NIEBURGS, New York.

Colposcopy: A Neglected Method of Cervical Evaluation. WARREN R. LANG, Philadelphia.

The Recent Treatment of Tuberculosis in Pregnancy.

GEORGE SCHAEFER, Forest Hills, L. I., N. Y., and STANLEY J. BIRNBAUM and R. GORDON DOUGLAS, New York.

SECTION ON OPHTHALMOLOGY

MEETS IN THE PARK SHERATON HOTEL, BALLROOM

OFFICERS OF SECTION

Chairman—ALGERNON B. REESE, New York.

Vice-Chairman—HEDWIG S. KUHN, Hammond, Ind.

Secretary—HAROLD G. SCHEIE, Philadelphia.

Delegate—RALPH O. RYCHENER, Memphis, Tenn.

Representative to Scientific Exhibit—FRANK W. NEWELL, Chicago.

Executive Committee—ERLING W. HANSEN, Minneapolis; ALBERT D. RUEDEMANN, Detroit; DR. REESE; DR. SCHEIE; and DR. RYCHENER.

Program of Section on Ophthalmology

Wednesday, June 5—9 a. m.

Chairman's Address: The Differential Diagnosis of Melanoma of the Uvea from Simulating Lesions. A. B. REESE, New York.

Address of Invited Foreign Guest: The Differential Diagnosis of the Tapeto-Retinal Degenerations. PROF. J. FRANCOIS, Ghent, Belgium.

Ocular Involvement in Naevoxantho-Endothelioma: Report of Two Cases. FRANK W. NEWELL, Chicago.

Discussion to be opened by T. E. SANDERS, St. Louis.

Pars Plana Cysts. SAMUEL T. ADAMS, Montreal, Canada.

Discussion to be opened by HERBERT M. KATZIN, New York.

Improvement in the Hypertensive Retinopathy of 109 Patients Following Combined Adrenal Resection and Sympathectomy. WILLIAM C. FRAYER, Philadelphia.

Discussion to be opened by JOHN WENDLAND, Minneapolis.

Malignant Melanoma of Uvei: Observations on Growth and Behavior, Enucleation Refused or Long Delayed.
BANKS ANDERSON, Durham, N. C.
Discussion to be opened by LORENZ ZIMMERMAN, Washington, D. C.

Studies on Continuous Electrocardiography During Ocular Surgery.
RALPH E. KIRSCH, PHILIP SAMET, and VICTOR KUGEL, Miami, Fla.
Discussion to be opened by HAROLD F. FALLS, Ann Arbor, Mich.

Thursday, June 6—9 a. m.

EXECUTIVE SESSION.

Address of Invited Foreign Guest: Iridencleisis in Buphthalmos.
FRANK W. LAW, London.

Evaluation of New Anticholinesterase Agents in Glaucoma.
IRVING H. LEOPOLD, DAVID GOLD, and PAUL GOLD, Philadelphia.
Discussion to be opened by H. SAUL SUGAR, Detroit.

A Surgical Approach to Total Xerophthalmia Through Transplantation of the Parotid Duct.
JAMES E. BENNETT and ARBY L. BAILEY, Cleveland.
Discussion to be opened by TRYGVE GUNDERSEN, Boston.

New Aspects of Ophthalmoneurologic Diagnosis.
GOODWIN M. BREININ, New York.
Discussion to be opened by FRANCIS HEED ADLER, Philadelphia.

Friday, June 7—9 a. m.

Symposium on Problems in Cataract Extraction

Five Years Experience with the Ridley Operation.
WARREN S. REESE and TURGUT N. HAMDI, Philadelphia.

Acrylic Lenses in the Anterior Chamber: Experimental Studies in Animals.
J. H. KING JR. and RAYMOND SKEEHAN, Washington, D. C.

Clinical Report on Three Cases of Postoperative Epithelial Downgrowth Treated by Curettage and Cautery with 70% Alcohol.
JOHN C. LONG and GEORGE S. TYNER, Denver.

Cataract Extraction and Aqueous Outflow.
JAMES E. MILLER, G. RICHARD KESKEY, and BERNARD BECKER, St. Louis.

Tonographic and Gonioscopic Studies Before and After Cataract Extraction.
PEI-FEI LEE and ROBERT R. TROTTER, Boston.

Contact Lenses in Aphakia. EVERETT L. GOAR, Houston, Texas.
Comparison of the Peripheral Iridectomy Vs the Keyhold Iridectomy.
DAVID S. JOHNSON and RALPH H. PINO, Detroit.

Conservatism in the Treatment of Congenital Cataract.
FRANK D. COSTENBADER and DAN G. ALBERT, Washington, D. C.
Discussion to be opened by JOHN H. DUNNINGTON, New York; PETER C. KRONFELD, Chicago; JOHN M. MCLEAN, New York; A. EDWARD MAUMENEE, Baltimore; and DERRICK VAIL, Chicago.

Association for Research in Ophthalmology, Inc.

OFFICERS

Chairman—T. E. SANDERS, St. Louis.
Secretary—LORAND V. JOHNSON, Cleveland.

Program of Association for Research in Ophthalmology, Inc.

Monday, June 3—9 a. m.

MEETS IN THE PARK SHERATON HOTEL, FORUM ROOM

Effects of Tachistoscopic Training on Visual Functions in Myopic Patients.
CONRAD BERENS, LOUIS J. GIRARD, GERALD FONDA, and SAUL B. SELLS.
Discussion to be opened by KENNETH N. OGLE.

The Human Optic Papilla: A Demonstration of New Anatomical and Pathological Findings. J. REIMER WOLTER.
Discussion to be opened by PARKER HEATH.

Continuing Studies on the Association of Adenovirus Type 8 with Epidemic Keratoconjunctivitis.
L. HANNA, E. JAWETZ, Y. MITSUI, P. THYGESON, S. KIMURA, and A. NICHOLAS.
Discussion to be opened by ALSON E. BRALEY.

Precipitating Antibodies to Toxoplasma: A Follow-Up Study of Findings in the Blood and Aqueous Humor.
G. RICHARD O'CONNOR.

INTERMISSION

Factors Underlying the Development of the Ciliary Processes.
ALFRED J. COULOMBRE and JANE L. COULOMBRE.
Discussion to be opened by GEORGE K. SMELSER.

The Effects of Maternal Hypoxia on Inheritance of Recessive Blindness in Mice. AELETA NICHOLS BARBER.
Discussion to be opened by HAROLD F. FALLS.

Distribution of Radioactive Sulphate in the Developing Eye.
GEORGE K. SMELSER and VICTORIA OZANICS.
Discussion to be opened by ALBERT M. POTTS.

Oxygen Studies in Retrolental Fibroplasia. VI. The Effects of Concentration and Duration of Exposure to Oxygen on Experimental Ocular Lesions. ARNALL PATZ.
Discussion to be opened by V. EVERETT KINSEY.

Monday, June 3—1:30 p. m.

The Response Pathway from Photoreceptor to Nerve Cells in the Limulus Lateral Eye. LEO E. LIPETZ.
Discussion to be opened by WERNER K. NOELL.

Solution of the Differential Equations Pertaining to Aqueous Humor Dynamics. SAMUEL I. ASKOVITZ.
Discussion to be opened by V. EVERETT KINSEY.

Electromyography of Fusional Movements.
FREDERICK C. BLODI and MAURICE VAN ALLEN.
Discussion to be opened by GOODWIN M. BREININ.

Autonomic Innervation of Extraocular Eye Muscles.
WALTER MITCHELL and GERHARD A. BRECHER.
Discussion to be opened by FRANCIS H. ADLER.

The Effect of Ultrasonic Radiation Upon the Rate of Absorption of Blood from the Vitreous. GILBERT BAUM.
Discussion to be opened by LUDWIG VON SALLMANN.

INTERMISSION

Ocular Effects of Systemic Siderosis.
PAUL A. CIBIS, E. BROWN, and S. M. HONG.
Discussion to be opened by DAVID G. COGAN.

Cytochemical and Morphological Changes in Corneal Stromal Cells Following Wounding. VIRGINIA L. WEIMAR.
Discussion to be opened by A. E. MAUMENEE.

Further Studies on the Viability of Frozen Corneas. As Determined in Tissue Culture.
JERRY W. DRAHEIM, SAMUEL D. MCPHERSON JR., VIRGINIA J. EVANS, and WILTON R. EARLE.
Discussion to be opened by WILLIAM HAVENER.

Tuesday, June 4—1:30 p. m.

A Study of the Uptake of P^{32}, Zn^{65} and I^{131} by Experimental Malignant Melanoma.
JAMES F. O'ROURKE, HUMPHREY PATTON, and ROBERT BRADLEY.
Discussion to be opened by EDWIN DUNPHY.

Anterior Chamber Perfusion Studies. II. Controlled Particle Size in Relationship to Pore Size.
PHILIP A. PETER, WOOD LYDA, and NARENDRA KRISHNA.
Discussion to be opened by PETER C. KRONFELD.

A Study of the Innervation of the Chamber Angle. Part II. The Origin on Trabecular Axons Revealed by Degeneration Studies.
MONTE G. HOLLAND, LUDWIG VON SALLMANN, and ELEANOR M. COLLINS.
Discussion to be opened by RUSSELL L. CARPENTER.

The Effect of Succinylcholine on the Extraocular Striate Muscles and on the Intraocular Pressure. F. J. MACRI.
Discussion to be opened by W. MORTON GRANT.

INTERMISSION

Friedenwald Memorial Lecture: Physiologic Control of Corneal Hydration. JOHN E. HARRIS.

On the Occurrence of Proteolytic Enzymes in Normal and Cataractous Lenses. E. ALBERT ZELLER and ANIMA DEVI.
Discussion to be opened by ZACHARIAS DISCHE.

The Transcorneal Potential.
ALBERT M. POTTS and ROBERT MODRELL.
Discussion to be opened by D. VENKAT REDDY.

Incorporation of S^{35}-Inorganic Sulfate into Mucopolysaccharides of Cornea. BERNARD WORTMAN and JACK L. STROMINGER.
Discussion to be opened by E. ALBERT ZELLER.

Wednesday, June 5—1:30 p. m.

In Vivo Intralenticular Implantation of Various Dyes and Enzyme Inhibitors. ADOLPH W. VOGEL.
Discussion to be opened by LUDWIG VON SALLMANN.

In Vitro Lens Studies. II. Production of Cataractous Changes.
MARGUERITE A. CONSTANT.
Discussion to be opened by CARL WACHTL.

Studies on the Crystalline Lens: VII. Ascorbic Acid and Mitotic Activity in Cultured Lenses.
V. EVERETT KINSEY and CARL WACHTL.
Discussion to be opened by BERNARD SCHWARTZ.

Studies on the Sulfhydryl Groups of Lens.
LORENZO O. MEROLA and JIN H. KINOSHITA.
Discussion to be opened by ZACHARIAS DISCHE.

BUSINESS MEETING

INTERMISSION

Studies on Protein and Protein Synthesis of the Lens in Galactose Cataract.
ZACHARIAS DISCHE, JOSHUA YOULUS, and GINEVRA ZELMENIS.
Discussion to be opened by JOHN W. PATTERSON.

Insulin and the Lens. T. FARKAS and JOHN W. PATTERSON.
Discussion to be opened by JIN H. KINOSHITA.

Lens Proteins. JULES FRANCOIS.
Discussion to be opened by ROBERT A. RESNIK.

Lens Proteins. ROBERT A. RESNIK.
Discussion to be opened by ENDRE A. BALAZS.

Thursday, June 6—1:30 p. m.

Studies of Bruch's Membrane. 1. Results of Flow Studies Through a Bruch's Membrane-Choroid Preparation.
WOOD LYDA, NILS ERIKSEN, and NARENDRA KRISHNA.
Discussion to be opened by PETER C. KRONFELD.

The Effects of Ganglionic Blocking Blood on Aqueous Flow in Normal and Glaucomatous Subjects. DAVID A. ROSEN.
Discussion to be opened by ELMER J. BALLINTINE.

The Aqueous: Plasma Steady-State Ratios of Potassium and Sodium and the Influence of Diamox and Dibenamine Thereon.
JOHN E. HARRIS, A. EUGENE CARLSON, LOUISE GRUBER, and GERTRUDE HOSKINSON.
Discussion to be opened by IRVING H. LEOPOLD.

Studies on the Mode of Action of Pilocarpine on Aqueous Outflow: Correlation of Tonographic and Gonioscopic Data with Histologic Studies of the Trabecular Meshwork of Monkey Eyes.
MILTON FLOCKS and H. CHRISTIAN ZWENG.
Discussion to be opened by BERNARD BECKER.

INTERMISSION

Proctor Medal Recipient: Ocular Vascularization in Health and Disease. NORMAN ASHTON.

Dynamics of Diamox Induced Bicarbonate Changes in Aqueous Humor of Rabbit Eye.
HARRY GREEN, MAYER J. MANN, SAMUEL I. ASKOVITZ, and IRVING H. LEOPOLD.
Discussion to be opened by JOHN E. HARRIS.

The Bicarbonate Concentration of Guinea Pig Aqueous Humor: Effect of Scurvy and of Acetazolamide.
BERNARD BECKER.
Discussion to be opened by HARRY GREEN.

The Tritium Steady State of the Rabbit Eye.
MAX FRIEDMAN, FRANK W. NEWELL, GEORGE V. LEROY, and GEORGE T. OKITA.
Discussion to be opened by MAURICE B. LANGHAM.

SECTION ON ORTHOPEDIC SURGERY

MEETS IN COLISEUM, ROOM 2, 2ND FLOOR

OFFICERS OF SECTION

Chairman—EDWARD L. COMPERE, Chicago.
Vice-Chairman—FREDERICK R. THOMPSON, New York.
Secretary—H. HERMAN YOUNG, Rochester, Minn.
Delegate—H. RELTON MCCARROLL, St. Louis.
Representative to Scientific Exhibit—JAMES I. KENDRICK, Cleveland.
Executive Committee—JESSE T. NICHOLSON, Philadelphia; WILLIAM T. GREEN, Boston; DR. COMPERE; DR. YOUNG; and DR. MCCARROLL.

Wednesday, June 5—9 a. m.

Closed Reduction of Common Shoulder and Elbow Dislocation Without Anesthesia.
ROBERT W. PARVIN, West Point, N. Y.
Discussion to be opened by JOSEPH L. FLEMING, Detroit, and WILLIAM J. STEWART, Columbia, Mo.

The Use of Local Anesthesia in the Treatment of Fractures and Dislocations.
R. H. RAMSEY and H. E. PEDERSEN, Dearborn, Mich.
Discussion to be opened by ROBERT E. INGERSOLL, Boston, and MILTON C. COBEY, Washington, D. C.

Intramedullary "Pull-Out" Wire Fixation in Surgery of the Hand.
LEE J. CORDREY, Cleveland
Discussion to be opened by SAMUEL G. STUBBINS, Cleveland, and N. J. GIANNESTRAS, Cincinnati.

Fractures of the Elbow in Children: A Review of 300 Cases.
JOHN J. FAHEY and DONALD J. MAYLAHN, Chicago.
Discussion to be opened by CHARLES J. FRANKEL, Charlottesville, Va., and GEORGE HAMMOND, Boston.

Treatment of Fresh Fractures of the Neck of the Femur with Intramedullary Stem-Prostheses.
A. A. SAVASTANO, L. A. SAGE, and V. ZECCHINO, Providence, R. I.
Discussion to be opened by STANLEY S. TANZ, Tucson, Ariz., and FRANK E. STINCHFIELD, New York.

Ski Injuries. FREEMAN D. FOWLER, Idaho Springs, Colo.
Discussion to be opened by IRVIN E. HENDRYSON, Denver and J. STERLING BAXTER, Aspen, Colo.

Thursday, June 6—9 a. m.

ELECTION OF OFFICERS.

The Occult Fractures.
NORMAN J. ROSENBERG and RUDOLPH S. REICH, Cleveland.
Discussion to be opened by ALAN DE FOREST SMITH, New York, and CHARLES V. HECK, Chicago.

Moderately Severe Whiplash Injuries of the Cervical Spine and Their Radiologic Diagnosis.
MARTIN S. ABEL, San Francisco.
Discussion to be opened by RICHARD F. WAGNER, San Francisco, and JACOB KULOWSKI, St. Joseph, Mo.

Fractures of the Distal Third of the Femur.
MARCUS J. STEWART, Memphis, Tenn., SIDNEY L. WALLACE JR., Knoxville, Tenn.
Discussion to be opened by RUFUS H. ALLDREDGE, New Orleans, and DAVID S. GRICE, Boston.

Chairman's Address. EDWARD L. COMPERE, Chicago

The Care of the Infant with Dysplasia of the Hip.
PAUL C. COLONNA, Philadelphia
Discussion to be opened by ALFRED R. SHANDS, Wilmington, Del., and FREDERICK L. LIEBOLT, New York.

Treatment of Fractures of the Os Calcis.
MORTON H. LEONARD, El Paso, Texas.
Discussion to be opened by PAUL GOETOWSKI, Lincoln, Neb., and DOUGLAS D. TOFFELMIER, Oakland, Calif.

Friday, June 7—9 a. m.

JOINT MEETING WITH THE SECTION ON PHYSICAL MEDICINE IN COLISEUM, ROOM 1, 2ND FLOOR

Panel Discussion and Symposium on Care of the Severely Injured Patient

EDWARD L. COMPERE and LOUIS B. NEWMAN, Chicago, Moderators.

Supportive and Emergency Treatment.
WALTER G. MADDOCK, Chicago.
Neurosurgical Aspects. JAMES C. WHITE, Boston.
Urological Aspects. JAMES H. DEWEERD, Rochester, Minn.
Orthopedic Aspects. H. RELTON MCCARROLL, St. Louis.
Plastic Surgery Aspects. ROBIN ANDERSON, Cleveland.
Physical Therapy Aspects.
FREDERIC J. KOTTKE, Minneapolis.
Chest Surgery Aspects.
LAWRENCE M. SHEFTS, San Antonio, Texas.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN COLISEUM, ROOM 1, 2ND FLOOR

OFFICERS OF SECTION

Chairman—H. RUSSELL FISHER, Los Angeles.
Vice-Chairman—EDWIN F. HIRSCH, Chicago.
Secretary—HUGH A. EDMONDSON, Los Angeles.
Delegate—LALL G. MONTGOMERY, Muncie, Ind.
Representative to Scientific Exhibit—SAMUEL A. LEVINSON, Chicago.
Executive Committee—SAMUEL A. LEVINSON, Chicago; ROGER D. BARKER, Durham, N. C.; DR. FISHER; DR. EDMONDSON; and DR. MONTGOMERY.

Wednesday, June 5—9 a. m.

Lobular Carcinoma in Situ of the Breast: A Follow-Up Study.
FRANK W. FOOTE JR., New York.
Discussion to be opened by HUGH G. GRADY, Washington, D. C.

The Incidence of Metastatic Carcinoma to Axillary Lymph Nodes from Carcinoma of the Breast as Revealed by Serial Sections of the Nodes.
JOHN R. SCHENKEN, JERRY TAMISIEA, and JAMES L. VOSE, Omaha, and FRANCIS C. COLEMAN, Des Moines, Iowa.
Discussion to be opened by DAVID A. WOOD, San Francisco.

The Natural History of Cancer of the Breast.
HARDIN B. JONES, Berkeley, Calif.
Discussion to be opened by HARRY S. N. GREENE, New Haven, Conn.

Structural Features of Prognostic Significance in Human Breast Cancer.
MAURICE M. BLACK and FRANCIS D. SPEER, New York.
Discussion to be opened by ALFRED A. ANGRIST, New York.

Clinical and Pathological Findings Associated with the Treatment of Breast Cancer with Triethylenethiophosphoramide.
GEORGE E. MOORE and JOHN W. PICKREN, Buffalo.
Discussion to be opened by DAVID A. KARNOFSKY, New York.

Clinical Experience with Resection of the Internal Mammary Lymph Node Chain in Breast Cancer.
JEROME A. URBAN, New York.
Discussion to be opened by FRED W. STEWART, New York.

Thursday, June 6—9 a. m.

BUSINESS MEETING; ELECTION OF OFFICERS.

Observations on the Pathological and Physiological Effects of Alpha and Beta Particle Radiation in the Rat, Dog, and Man. STUART W. LIPPINCOTT, UPTON, N. Y.
Discussion to be opened by CARL F. TESSMER, Washington, D. C.

The Diagnosis and Significance of Thyroid Nodules.
PATRICK J. FITZGERALD, Brooklyn, N. Y.
Discussion to be opened by LAWRENCE S. SLOAN, New York.

Chairman's Address. H. RUSSELL FISHER, Los Angeles.

Host Factors in Fatal Human Lung Cancer.
SHELDON C. SOMMERS, Boston.
Discussion to be opened by NORMAN J. WILSON, Boston, and ERNEST WYNDER, New York.

Use of Chromium-51 Tagged Red Cells in Differentiation of Hypersplenism. OSCAR B. HUNTER JR., Washington, D. C.
Discussion to be opened by JOHN W. REBUCK, Detroit.

Glucagon and the Anti-Insulin Action of Cortisone.
BRUNO W. VOLK and SYDNEY S. LAZARUS, Brooklyn, N. Y.
Discussion to be opened by PIERO FOA, Chicago.

Brucellosis and Heart Disease: IV. The Etiology of Calcific Aortic Stenosis. THOMAS M. PEERY, Washington, D. C.
Discussion to be opened by WALTER L. BIERRING, Des Moines, Iowa.

Friday, June 7—9 a. m.

JOINT MEETING WITH SECTION ON GASTROENTEROLOGY AND PROCTOLOGY IN COLISEUM, ROOM 4, 4TH FLOOR

Panel Discussion on Cancer of the Gastrointestinal Tract

ROBERT M. ZOLLINGER, Columbus, Ohio, Moderator.

Participants: BENJAMIN CASTLEMAN and J. ENGLEBERT DUNPHY, Boston; WALTER L. PALMER, Chicago; MARVIN POLLARD, Ann Arbor, Mich.; ISADOR RAVDIN, Philadelphia, and ARTHUR PURDY STOUT, New York.

SECTION ON PEDIATRICS

MEETS IN THE PLAZA HOTEL, TERRACE ROOM

OFFICERS OF SECTION

Chairman—M. G. PETERMAN, Milwaukee.
Vice-Chairman—ALFRED E. FISCHER, New York.
Secretary—WYMAN C. C. COLE SR., Detroit.
Delegate—WOODRUFF L. CRAWFORD, Rockford, Ill.
Representative to Scientific Exhibit—F. THOMAS MITCHELL, Memphis, Tenn.
Executive Committee—WILLIAM WESTON JR., Columbia, S. C.; F. THOMAS MITCHELL, Memphis, Tenn.; DR. PETERMAN; DR. COLE; and DR. CRAWFORD.

Tuesday, June 4—2 p. m.

JOINT MEETING WITH SECTION ON RADIOLOGY IN THE PLAZA HOTEL, TERRACE ROOM

Dysplasia Epiphysialis Hemimelica.
HAROLD E. FULTON, Detroit.
Discussion to be opened by JARRELL E. MILLER, Dallas, Texas.

The Asymptomatic Period in Retained Foreign Bodies of the Bronchus in Children.
GEORGE A. MILLER, CESARE GIANTURCO, and HOWARD C. NEUCKS, Urbana, Ill.
Discussion to be opened by JAMES S. WALKER, Urbana, Ill.

Mediastinal Masses in Children.
ROBERT J. REEVES and GEORGE J. RICHARDS JR., Durham, North Carolina.
Discussion to be opened by ROY R. GREENING, Philadelphia.

Lobar Emphysema.
HARRY W. FISCHER, Iowa City, and JOSEPH L. LUCIDO and CHESTER P. LYNXWILER, St. Louis.
Discussion to be opened by JOHN P. CAFFEY, New York.

Reduced Total Exposure for the Roentgen Diagnosis of Intestinal Obstruction of the Newborn.
JOHN W. HOPE, Philadelphia.
Discussion to be opened by C. EVERETT KOOP, Philadelphia.

The Normal Heart and Evidence of Congenital Abnormality: Their Roentgen Manifestations in Very Early Infancy.
GEORGE COOPER JR., Charlottesville, Va.
Discussion to be opened by MCLEMORE BIRDSONG, Charlottesville, Va.

High Speed Biplane Selective Angiocardiography.
LAWRENCE A. DAVIS, LEONARD LEIGHT, and EVERETT L. PIRKEY, Louisville, Ky.

Ultra-Short Exposures and a Rapid Film Changer in Pediatric Roentgenography.
BARTON R. YOUNG, ROBERT B. FUNCH, and JAY W. MACMORAN, Philadelphia.
Discussion on papers by DRS. DAVIS, LEIGHT and PIRKEY, and DRS. YOUNG, FUNCH, and MACMORAN to be opened by HERBERT M. STAUFFER, Philadelphia, and JOHN A. CAMPBELL, Indianapolis.

Wednesday, June 5—2 p. m.

BUSINESS MEETING AND ELECTION OF OFFICERS.

Chairman's Address. M. G. PETERMAN, Milwaukee.

The Joseph Goldberger Lecture on Clinical Nutrition: Trends and Fashions in Modern Pediatric Nutrition.
PAUL GYORGY, Philadelphia.

Neonatal Icterus: With Special Reference to A and B Incompatibility.
VICTOR C. VAUGHN III and FROUZANDEH B. BRELIAN, Philadelphia.

Organic and Organizational Aspects of the Diagnosis and Treatment of School Adjustment Problems.
HOMER F. WEIR, Rockford, Ill.

The Health Services School-Age Children Need.
THOMAS E. SHAFFER, Columbus, Ohio.

The Role of the Private Physician in Health Programs for School Children. JOHN L. REICHERT, Chicago.

Thursday, June 6—9 a. m.

JOINT SESSION WITH THE SECTION ON OBSTETRICS AND GYNECOLOGY IN HENRY HUDSON HOTEL, BALLROOM

Panel Discussion on Postmaturity

NICHOLAS J. EASTMAN, Baltimore, Moderator.

Participants: STEWART H. CLIFFORD, Boston; SCHUYLER KOHL, Brooklyn; and ROBERT E. L. NESBITT JR., Albany, N. Y.

Panel Discussion on Pulmonary Hyaline Membrane Disease

CHARLES C. CHAPPLE, Washington, D. C., Moderator.

Participants: PAUL D. BRUNS, Denver, and PETER GRUENWALD, Jersey City, N. J.

SECTION ON PHYSICAL MEDICINE

MEETS IN THE PARK SHERATON HOTEL, FORUM ROOM

OFFICERS OF SECTION

Chairman—Louis B. Newman, Chicago.
Vice-Chairman—Miland E. Knapp, Minneapolis.
Secretary—Walter J. Zeiter, Cleveland.
Delegate—Frank H. Krusen, Rochester, Minn.
Representative to Scientific Exhibit—Donald A. Covalt, New York.
Executive Committee—William H. Schmidt, Philadelphia; Frances Baker, San Mateo, Calif.; Dr. Newman; Dr. Zeiter; and Dr. Krusen.

Wednesday, June 5—9 a. m.

BUSINESS MEETING

Chairman's Address: Physical Medicine and Rehabilitation in Rheumatic Heart Dsease. Louis B. Newman, Chicago.

Diagnosis, Prognosis and Treatment Techniques in Aphasia.
Earl F. Hoerner, West Orange, N. J.
Discussion to be opened by Harris Pomerantz, New Haven, Conn.

Evaluation and Management of the Brain-Damaged Patient.
Jerome S. Tobis, Milton Lowenthal, and Simon Maringer, New York.
Discussion to be opened by Paul A. Nelson, Cleveland.

Management of Somatic Complications in Psychiatric Patients.
Jack Meislin, Montrose, N. Y.
Discussion to be opened by Fritz Friedland, Boston.

Rehabilitation of Bilateral Lower Extremity Amputees.
Arthur L. Watkins, Boston, and Sung J. Liao, Rocky Hill, Conn.
Discussion to be opened by Charles Long II, Cleveland.

Thursday, June 6—9 a. m.

BUSINESS MEETING; ELECTION OF OFFICERS

Spinal Cord Injury: Rehabilitation Costs and Results in 31 Successive Cases. S. Harry Berns, New York.
Discussion to be opened by James W. Rae, Ann Arbor, Michigan.

Electromyography in Clinical Practice in Muscle Atrophy.
Max K. Newman, Detroit.
Discussion to be opened by O. Leonard Huddleston, Santa Monica, Calif.

Specific Management for Lumbar and Sacral Radiculitis.
Frederic B. House, and Sylvester J. O'Connor, Ann Arbor, Mich.
Discussion to be opened by Charles D. Shields, Washington, D. C.

Industrial Injury: The Practical Need for Capability Evaluation.
Leonard J. Yamshon, Los Angeles.
Discussion to be opened by Edward E. Gordon, Chicago.

The Compensation Factor in Acute Back Injuries.
Edward M. Krusen, Dallas, Texas, and Dorothy E. Ford, St. Louis.
Discussion to be opened by Miland E. Knapp, Minneapolis.

Some Social Factors in the Life and Employment Possibilities of the Physically Handicapped. Else B. Kris, New York.
Discussion to be opened by A. B. C. Knudson, Washington, D. C.

Friday, June 7—9 a. m.

JOINT MEETING WITH THE SECTION ON ORTHOPEDIC SURGERY IN COLISEUM, ROOM 1, 2ND FLOOR

Panel Discussion and Symposium on Care of the Severely Injured Patient

Edward L. Compere and Louis B. Newman, Chicago, Moderators.

Supportive and Emergency Treatment. Walter G. Maddock, Chicago.
Neurosurgical Aspects. James C. White, Boston.
Urological Aspects. James H. De Weerd, Rochester, Minn.
Orthopedic Aspects. H. Relton McCarroll, St. Louis.
Plastic Surgery Aspects. Robin Anderson, Cleveland.
Physical Therapy Aspects. Frederic J. Kottke, Minneapolis.
Chest Surgery Aspects. Lawrence M. Sheffs, San Antonio, Texas.

SECTION ON PREVENTIVE MEDICINE

MEETS IN COLISEUM, ROOM 3, 3RD FLOOR

OFFICERS OF SECTION

Chairman—Edward J. Tracy, Dayton, Ohio.
Vice-Chairman—Bruce Underwood, Washington, D. C.
Secretary—Frank Princi, Cincinnati.
Delegate—Rutherford T. Johnstone, Los Angeles.
Representative to Scientific Exhibit—Paul A. Davis, Akron, Ohio.
Executive Committee—John J. Phair, Cincinnati; Edward P. Luongo, Los Angeles; Dr. Tracy; Dr. Princi; and Dr. Johnstone.

Wednesday, June 5—9 a. m.

BUSINESS MEETING.

Chairman's Address. Edward J. Tracy, Dayton, Ohio.

Joint Meeting with American Academy of Occupational Medicine

Effective Return to Work of the Cardiac Employee.
J. J. Thorpe, New York, and Neill K. Weaver, Baton Rouge, La.

Group Approach to Weight Reduction.
Raymond J. Murray, Great Neck, N. Y.

Myocardial Infarction in a One Year Industrial Study.
Sidney Pell and C. A. D'Alonzo, Wilmington, Del.

Twenty Years Experience with Rejection for Employment.
Arthur F. Mangelsdorff, Plainfield, N. J.

Preventive Medicine in Naval Aviation Training: the Cooperative Efforts of Psychology and Psychiatry.
Philip B. Philips and John T. Bair, Pensacola, Fla.

Thursday, June 6—9 a. m.

Joint Meeting with American Association of Public Health Physicians

The Changing Status of Virological Diagnostic Services.
F. S. Cheever, Pittsburgh.

Research in State and Local Health Departments.
Albert V. Hardy, Jacksonville, Fla., and Thomas D. Dublin, Bethesda, Md.

Health Problems of the Aged: A Challenge to Preventive Medicine. Leroy E. Burney, Washington, D. C.

An Epidemiological Approach to the Study of Cardiovascular Diseases.
James Watt and William H. Stewart, Bethesda, Md.

Health Services for the School Aged Child: A New Approach.
Harold Jacobziner, New York.
Discussion to be opened by Robert W. Culbert, New York.

Friday, June 7—9 a. m.

Joint Meeting with the Aero Medical Association

The Role of the Flight Surgeon in Aviation Safety.
Carl E. Wilbur, Washington, D. C.

Preventive Aspects of Aviation Medicine in a Commercial Airline Operation. Otis B. Schreuder, Jamaica, N. Y.
Discussion to be opened by Kenneth L. Stratton, Flushing, N. Y.

Prevention of Death and Injury in Aircraft Accidents.
H. G. Moseley, San Bernardino, Calif., Frank M. Townsend and V. A. Stembridge, Washington, D. C.
Discussion to be opened by John P. Stapp, Holloman, N. Mex.

The Problem of Spatial Disorientation.
James B. Nuttall, Washington, D. C.

Biological Effects of Microwave Radiation on Air Force Personnel. George M. Knauf, Griffiss Air Force Base, N. Y.
Discussion to be opened by Robert T. P. de Treville, Dayton, Ohio.

SECTION ON RADIOLOGY

MEETS IN COLISEUM, ROOM 2, 2ND FLOOR

OFFICERS OF SECTION

Chairman—Donald S. Childs, Syracuse, N. Y.
Vice-Chairman—Wendell G. Scott, St. Louis.
Secretary—Traian Leucutia, Detroit.
Delegate—Eugene P. Pendergrass, Philadelphia.
Representative to Scientific Exhibit—Richard H. Chamberlain, Philadelphia.
Executive Committee—Laurence L. Robbins, Boston; Leo G. Rigler, Duarte, Calif.; Dr. Childs; Dr. Leucutia; and Dr. Pendergrass.

Tuesday, June 4—2 p. m.

JOINT SESSION WITH THE SECTION ON PEDIATRICS
IN THE PLAZA HOTEL, TERRACE ROOM

Dysplasia Epiphysialis Hemimelica.
Harold E. Fulton, Detroit.
Discussion to be opened by Jarrell E. Miller, Dallas, Texas.

The Asymptomatic Period in Retained Foreign Bodies of the Bronchus in Children.
George A. Miller, Cesare Gianturco, and Howard C. Neucks, Urbana, Ill.
Discussion to be opened by James S. Walker, Urbana, Ill.

Mediastinal Masses in Children.
Robert J. Reeve; and George J. Richards Jr., Durham, North Carolina.
Discussion to be opened by Roy R. Greening, Philadelphia.

Lobar Empyhsema.
Harry W. Fischer, Iowa City, and Joseph L. Lucido and Chester P. Lynxwiler, St. Louis.
Discussion to be opened by John P. Caffey, New York.

Reduced Total Exposure for the Roentgen Diagnosis of Intestinal Obstruction of the Newborn.
John W. Hope, Philadelphia.
Discussion to be opened by C. Everett Koop, Philadelphia.

The Normal Heart and Evidence of Congenital Abnormality: Their Roentgen Manifestations in Very Early Infancy.
George Cooper Jr., Charlottesville, Va.
Discussion to be opened by McLemore Birdsong, Charlottesville, Va.

High Speed Biplane Selective Angiocardiography.
Lawrence A. Davis, Leonard Leight, and Everett L. Pirkey, Louisville, Ky.

Ultra-Short Exposures and a Rapid Film Changer in Pediatric Roentgenography.
Barton R. Young, Robert B. Funch, and Jay W. MacMoran, Philadelphia.
Discussion on papers by Drs. Davis, Leight and Pirkey, and Drs. Young, Funch, and MacMoran to be opened by Herbert M. Stauffer, Philadelphia, and John A. Campbell, Indianapolis.

Wednesday, June 5—2 p. m.

ELECTION OF OFFICERS.

Chairman's Address: Away We Go.
Donald S. Childs, Syracuse, N. Y.

Roentgenography in Unsuspected Cancer of the Breast.
J. Gershon-Cohen and Helen Ingleby, Philadelphia.

Carcinoma of the Lung: A Discussion of Early Diagnosis and Surgical Treatment.
Lyman A. Brewer III, Angel F. Bai, John N. Little, and Gregorio Rabago, Los Angeles.
Discussion on papers by Drs. Gershon-Cohen and Ingleby, and Drs. Brewer, Bai, Little, and Rabago to be opened by Leo G. Rigler, Minneapolis.

The Radiation Hazards of Intravenous Pyelography.
John F. Roach, Irving Van Woert Jr., Paul I. Kearney, and Ilhan Kilicozlu, Albany, N. Y.
Discussion to be opened by John A. Evans, New York.

A New Approach to the Colon Study: High Kilovoltage Spot Compression Technique.
Steven J. Figiel, Leo S. Figiel, and Desmond K. Rush, Detroit.

Polypoid Mucosal Lesions of the Gallbladder: Pathologic and Roentgenologic Features.
G. M. Carrera and Seymour Ochsner, New Orleans.
Discussion on papers by Drs. Figiel and Rush, and Drs. Carrera and Ochsner to be opened by Vincent P. Collins, Houston, Texas, and William H. Shehadi, New York.

Thursday, June 6—2 p. m.

JOINT SESSION WITH SECTION ON DISEASES OF THE CHEST
IN HENRY HUDSON HOTEL, BALLROOM

Panel Discussion on Bronchoesophageal Problems
J. Paul Medelman, St. Paul, Moderator.

Internist. Reginald H. Smart, Los Angeles.
Radiologists.
John F. Holt, Ann Arbor, Mich., and Paul C. Swenson, Philadelphia.
Endoscopist. Paul H. Holinger, Chicago.
Surgeon. T. J. Kinsella, Minneapolis.

Panel Discussion on Cardiac Tumors and Allied Conditions

ANDRE BRUWER, Rochester, Minn., Moderator.

Internist. F. MASON SONES JR., Cleveland.

Radiologists.
EUGENE P. PENDERGRASS, Philadelphia, and WENDELL G. SCOTT, St. Louis.

Surgeons.
DWIGHT E. HARKEN, Boston, and JOHN W. KIRKLIN, Rochester, Minn.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN COLISEUM, ROOM 4, 4TH FLOOR

OFFICERS OF SECTION

Chairman—WALTER G. MADDOCK, Chicago.
Vice-Chairman—HENRY K. RANSOM, Ann Arbor, Mich.
Secretary—GUSTAF E. LINDSKOG, New Haven, Conn.
Delegates—GROVER C. PENBERTHY, Detroit.
Representative to Scientific Exhibit—JOHN H. MULHOLLAND, New York.
Executive Committee—ROBERT M. ZOLLINGER, Columbus, Ohio; WALTMAN WALTERS, Rochester, Minn.; DR. MADDOCK; DR. LINDSKOG; and DR. PENBERTHY.

Tuesday, June 4—2 p. m.

The Preoperative and Postoperative Care of Pyloric Stenosis. CLIFFORD D. BENSON, Detroit.
Discussion to be opened by E. BRYCE HALPIN, Detroit, and ROBERT E. COOKE, Baltimore.

Intestinal Obstruction of Congenital Origin. H. WILLIAM CLATWORTHY JR., Columbus, Ohio.
Discussion to be opened by L. K. PICKETT, Syracuse, N. Y., and E. W. GERRISH, Cleveland.

Primary Repair of Exstrophy of the Bladder. ORVAR SWENSON, Boston.
Discussion to be opened by TAGUE C. CHISHOLM, Minneapolis, and J. HARTWELL HARRISON, Boston.

Undescended Testicle: A Logical and Embryological Approach to Management. C. EVERETT KOOP, Philadelphia.
Discussion to be opened by CLIFFORD D. BENSON, Detroit, and R. J. IZANT, Columbus, Ohio.

Hirschprung's Disease in Early Infancy. GEORGE W. DORMAN, Dallas.
Discussion to be opened by ORVAR SWENSON, Boston, and C. EVERETT KOOP, Philadelphia.

Meckel's Diverticulum. WILLIAM B. KIESWETTER, Pittsburgh.
Discussion to be opened by E. L. WRENN JR., Memphis, and T. C. JEWETT JR., Buffalo.

Wednesday, June 5—1:45 p. m.

BUSINESS MEETING; ELECTION OF OFFICERS

Chairman's Address: WALTER G. MADDOCK, Chicago.

Congenital Right-Sided Diaphragmatic Hernia. ERNEST E. ARNHEIM, New York.
Discussion to be opened by ROBERT E. GROSS, Boston, and E. J. DONOVAN, New York.

Common Patterns of Pathology Seen in So-Called Imperforate Anus, and Their Surgical Management. ALEXANDER H. BILL JR., Seattle.
Discussion to be opened by ARTHUR DE BOER, Chicago, and C. EVERETT KOOP, Philadelphia.

Inguinal Hernias in Infants and Children. ARTHUR DE BOER and WILLIS POTTS, Chicago.
Discussion to be opened by G. P. PILLING IV, Philadelphia, and L. A. LONGINO, Boston.

Present Status of Open Cardiotomy.
C. WALTON LILLEHEI, RICHARD A. DEWALL, HERBERT E. WARDEN, VINCENT L. GOTT, and RICHARD L. VARCO, Minneapolis.
Discussion to be opened by CONRAD R. LAM, Detroit.

Rationale of Vagotomy and Pyloroplasty in the Surgical Treatment of Peptic Ulcer, with a Note on Massive Hemorrhage. GORDON K. SMITH and JACK M. FARRIS, Los Angeles.
Discussion to be opened by J. A. WEINBERG, Long Beach, Calif., and L. R. DRAGSTEDT, Chicago.

Thursday, June 6—2 p. m.

The Use of Stellate Ganglion Block to Treat the Postoperative Radical Mastectomy Syndrome.
DANIEL C. MOORE, L. DONALD BRIDENBAUGH, CALEB STONE, and JOEL BAKER, Seattle.
Discussion to be opened by LUCIUS D. HILL, III, Seattle, and WILLIAM T. FOLEY, New York.

Newer Methods in the Diagnosis of Hyperparathyroidism. BROCK E. BRUSH and MELVIN A. BLOCK, Detroit.
Discussion to be opened by OLIVER COPE, Boston, and E. N. COOK, Rochester, Minn.

Non-Penetrating Injuries of the Abdomen. ROBERT H. KENNEDY, New York.
Discussion to be opened by WILLIAM L. ESTES JR., Bethlehem, Pa., and HOWARD E. SNYDER, Winfield, Kan.

Importance and Technique of Emergency Operations for Obscure Upper Gastrointestinal Hemorrhage.
MELVIN P. OSBORNE and J. ENGLEBERT DUNPHY, Boston.
Discussion to be opened by L. K. FERGUSON, Philadelphia, and ROBERT M. ZOLLINGER, Columbus, Ohio.

Considerations in the Surgical Treatment of Cardiospasm (Achalasia).
F. HENRY ELLIS JR. and ARTHUR M. OLSEN, Rochester, Minnesota.
Discussion to be opened by DONALD B. EFFLER, Cleveland, and HERBERT C. MAIER, New York.

Reconstructive Surgery of the Head and Neck. C. C. COLEMAN JR., Charlottesville, Va.
Discussion to be opened by FRANCIS K. PALETTA, St. Louis, and MILTON T. EDGERTON JR., Baltimore.

SECTION ON UROLOGY

MEETS IN ESSEX HOUSE, COLONNADES

OFFICERS OF SECTION

Chairman—STANFORD W. MULHOLLAND, Philadelphia.
Vice-Chairman—ROGER W. BARNES, Los Angeles.
Secretary—THOMAS A. MORRISSEY, New York.
Delegate—JAY J. CRANE, Los Angeles.
Representative to Scientific Exhibit—MILTON M. COPLAN, Miami, Fla.
Executive Committee—CHARLES C. HIGGINS, Cleveland; RUBIN H. FLOCKS, Iowa City; DR. MULHOLLAND; DR. MORRISSEY; and DR. CRANE.

Wednesday, June 5—9 a. m.

Reconstructive Surgery for Hydronephrosis.
FRANK C. HAMM, Brooklyn, N. Y.
Discussion to be opened by C. D. CREEVY, Minneapolis.

Antibacterial, Vasopressor and Steroid Adjuvants in Urologic Surgery.
JOHN J. MURPHY and WILLIAM H. RATTNER, Philadelphia.
Discussion to be opened by WILLIAM P. HERBST JR., Washington, D. C., and ROBERT S. HOTCHKISS, New York.

Carcinoma of the Renal Pelvis and Ureter.
EDWARD N. COOK, ORMOND S. CULP, JOHN R. MCDONALD, and D. C. UTZ, Rochester, Minn.
Discussion to be opened by FRANCIS P. TWINEM, New York, and EARL E. EWERT, Boston.

Preoperative Estimation of Renal Function.
JACK LAPIDES and JOHN M. BOBBITT, Ann Arbor, Mich.
Discussion to be opened by J. HARTWELL HARRISON, Boston.

The Effect of Combined Androgen-Estrogen Therapy on Benign Prostatic Hypertrophy.
JOSEPH J. KAUFMAN and WILLARD E. GOODWIN, Los Angeles.
Discussion to be opened by HERBERT BRENDLER, New York, and GEORGE H. EWELL, Madison, Wis.

Management of Testicular Tumors.
WILLIAM J. STAUBITZ, IMRE V. MAGOSS, OSCAR J. OBERKIRCHER, MELBOURNE H. LENT, FRED D. MITCHELL, and WALTER T. MURPHY, Buffalo.
Discussion to be opened by WILLET F. WHITMORE JR., New York, and JAMES W. MERRICKS, Chicago.

Thursday, June 6—9 a. m.

BUSINESS MEETING; ELECTION OF OFFICERS

Chairman's Address: Abdominal Crises with Urologic Implications.
STANFORD W. MULHOLLAND, Philadelphia.

Recent Experiences with Extracorporeal Hemodialysis in the Management of Acute Renal Failure.
FRANK T. MAHER and JAMES C. BROADBENT, Rochester, Minnesota.
Discussion to be opened by THOMAS J. KIRWIN, New York, EARL E. EWERT, Boston, and HANS H. ZINSSER, New York.

Abnormalities of Calcium Metabolism of Patients with (Idiopathic) Urinary Calculi: Effect of Oral Sodium Phytate.
WILLIAM H. BOYCE, FRED K. GARVEY, and CAROL E. GOVEN, Winston-Salem, N. C.
Discussion to be opened by RUBIN H. FLOCKS, Iowa City.

Kidney Tumors in Children.
F. K. MOSTOFI and ILGA RULLIS, Washington, D. C.
Discussion to be opened by ARCHIE L. DEAN, New York; S. HARRIS JOHNSON, Pittsburgh; and ROBERT F. PRENTISS, San Diego, Calif.

Bilateral Nephrostomy in the Treatment of Carcinoma of the Bladder.
ALBERT E. GOLDSTEIN and ROBERT B. GOLDSTEIN, Baltimore.
Discussion to be opened by JOHN K. DE VRIES, East Orange, N. J.

Friday, June 7—9 a. m.

JOINT MEETING WITH SECTION ON GENERAL PRACTICE IN ESSEX HOUSE, COLONNADES

Clinical Significance of Hematuria.
CHARLES C. HIGGINS, Cleveland.

Pitfalls in Urographic Interpretations. M. SWICK, New York.

The Diagnosis of Renal Disease from the Urine Sediment.
ARNOLD S. RELMAN, Boston.

Medical and Surgical Management of Undescended Testicle and Other Scrotal Conditions.
NORRIS J. HECKEL, Chicago.

Premature Ejaculation: A Physiological Approach.
JAMES H. SEMANS, Durham, N. C.

Diseases of the Female Urethra.
HOUSTON S. EVERETT, Baltimore.

Panel Discussion and Question and Answer Period from the Audience. RUBIN H. FLOCKS, Iowa City, Moderator.

COLOR TELEVISION

COLISEUM, ROOM 5, 4TH FLOOR

The program has been prepared by the local committee on television under the chairmanship of NORTON S. BROWN, New York. The telecasts, sponsored and produced by Smith, Kline & French Laboratories of Philadelphia, will originate from the Roosevelt Hospital. Operative surgical panels will be presented from 9 to 11 on Tuesday, Wednesday, and Thursday mornings, and clinics will be presented in the afternoons from Monday through Thursday.

Monday, June 3—2 p. m.

2:00 p. m. **Arthritis Panel.**
Moderator: CORNELIUS TRAEGER, New York.
Panelists: PHILIP D. WILSON JR., CHARLES A. RAGAN JR., and EDWARD W. LOWMAN, New York.

3:00 p. m. **Atherosclerosis: Practical Considerations.**
WILLIAM W. FIELD, New York.

3:15 p. m. **Hematological Clinic.**
KENNETH T. DONALDSON, New York.

3:30 p. m. **Dermatological Clinic—Problems of Lesions of the Foot.**
ROYAL M. MONTGOMERY, New York.

Tuesday, June 4—9 a. m.

9:00 a. m. **Gastric Surgery.**
Operator: JAMES E. THOMPSON, New York.
Moderator: J. ENGLEBERT DUNPHY, Boston.
Panelists: CARLETON MATHEWSON JR., San Francisco; GORDON MCNEER, New York; and CLAUDE E. WELCH, Boston.

Tuesday, June 4—2 p. m.

2:00 p. m. **Allergy. Panel discussions from the Allergy Institute on Bronchial Asthma.**
Moderator: ROBERT A. COOKE or WILLIAM B. SHERMAN, New York.
Panelists: ROBERT CHOBOT and JAMES H. BARNARD, New York.

3:00 p. m. **Acute Cardiac Emergencies.**
Moderator: MYRON C. PATTERSON, New York.
Panelists: CHARLES A. R. CONNOR, HOWARD G. BRUENN, and CHARLES K. FRIEDBERG, New York.

3:30 p. m. **Social Service Functions in a General Hospital.**
HELEN SEIGRIST, WILLIAM H. BUTTON, and JULIAN M. FRESTON, New York.

Wednesday, June 5—9 a. m.

9:00 a. m. **Biliary Tract Surgery.**
Operator: Howard A. Patterson, New York.
Moderator: Frank Glenn, New York.
Panelists: John M. Dorsey, Evanston, Ill.; Howard R. Mahorner, New Orleans; John D. Martin Jr., Atlanta, Ga.

Wednesday, June 5—2 p. m.

2:00 p. m. **Fractures of the Leg.**
Rolla D. Campbell Jr., New York.

2:30 p. m. **Carcinoma of the Lung.**
Moderator: Henry G. Schaffeld, New York.
Panelists: Marvin V. Kuschner, Israel Steinberg, New York, and Oscar Auerbach, East Orange, N. J.

3:30 p. m. **Open Psychiatric Service in a General Hospital.**
Moderator: Norton S. Brown, New York.
Panelist: Robert W. Laidlaw, New York.

Thursday, June 6—9 a. m.

9:00 a. m. **Colon Surgery.**
Operator: Frederick H. Amendola, New York.
Moderator: Richard B. Cattell, Boston.
Panelists: James Harvey Johnston, Jackson, Miss.; Guy W. Horsley, Richmond, Va.; and Samuel McLanahan, Baltimore.

Thursday, June 6—2 p. m.

2:00 p. m. **Dissecting Aortic Aneurysms.**
Moderator: Arthur J. Antenucci, New York.
Panelist: Bernard Kalfayan, New York.

3:00 p. m. **Tranquilizing Drugs.**
Moderator: Israeli Jaffe, New York.
Panelists: James B. Preston, Syracuse, N. Y., and John M. Cotton, New York.

3:30 p. m. **Acute Barbiturate Poisoning—Discussion of Treatment.**
Charles C. Foote, New York.

4:00 p. m. **Infectious Diseases.**
Perrin A. Long, Brooklyn, N. Y.; Yale Kneeland Jr., New York; and Maxwell Finland, Boston.

MOTION PICTURE PROGRAM

In addition to the regular motion picture program that will be held in the Barbizon Room of the Barbizon Plaza Hotel, there will be an international film exhibition in the Theater of the Barbizon Plaza Hotel. On Wednesday evening there will be a première showing of the second film of the series "Medicine and the Law" in Room 4 on the fourth floor of the Coliseum.

Monday to Thursday, June 3-6

BARBIZON PLAZA HOTEL, BARBIZON ROOM

Following are some of the films that will be shown in the Barbizon Room from Monday noon through Thursday:

An Aid To Therapy: Bacterial Antibiotic Susceptibility Testing.
Frederick C. Fink and Leo L. Leveridge, Brooklyn, N. Y.

Applied Anatomy of the Anorectal Area.
Malcolm Hill and Elton L. Morel, Los Angeles.

Cholecystectomy and Operative Cholangiography.
Joel W. Baker and John H. Walker, Seattle.

Congenital Atresia of the Esophagus.
William L. Riker, Arthur De Boer, and Willis J. Potts, Chicago.

Dermatologic Office Procedures for the General Practitioner.
Gerald M. Frumess, Egbert I. Henschel, and Henry M. Lewis, Denver.

Disorders of the Heart Beat.
American Heart Association, New York.

Extracorporeal Circulation for Cardiopulmonary By-Pass.
Denton A. Cooley and Benjamin A. Belmonte, Houston, Texas.

Fractures of the Leg and Ankle.
William A. Larmon, Chicago.

Fractures of the Shaft of the Femur.
William A. Larmon, Chicago.

Functional Fixation of Femoral Neck Fractures.
William K. Massie, Lexington, Ky.

The Gilchrist-Merricks Substitute Bladder.
James W. Merricks and R. K. Gilchrist, Chicago.

The Hepato Jugular Reflux: A Helpful Sign in the Diagnosis and Treatment of Congestive Heart Failure.
J. Marion Bryant, New York.

Hypothyroidism: Its Pathognomonic Diagnosis and Its Treatment.
Paul Starr, Los Angeles.

Immediate Post Operative Care.
Frank Glenn, John M. Beal and Joseph F. Artusio, New York.

Incomplete Cholecystectomy.
Philip Thorek, Chicago.

Intestinal Polyposis.
John M. Waugh and Lloyd H. Bartholomew, Rochester, Minn.

The Larynx and Voice.
Hans Von Leden, Chicago.

Lesions of the Esophagus.
Paul H. Holinger and Kenneth C. Johnston, Chicago.

The Medical Witness.
American Medical Association and American Bar Association.

The Metabolic Insufficiency Syndrome.
Martin C. Sampson, Arthur Heming, and Edward J. Van Loon, Philadelphia.

The Meti-Steroids in Rheumatoid Arthritis.
Joseph Eidelsberg, New York; Abraham Kolodin, Montclair, N. J.; and Evelyn Merrick, Orange, N. J.

Modern Concepts of Epilepsy.
Francis W. Forster and Bushnell Smith, Washington, D. C.

Oxygen in Retrolental Fibroplasia.
Arnall Patz, Baltimore.

The Patient is a Person.
SAMUEL J. FOGELSON, Chicago.

Papillary Adenoma of the Thyroid Gland.
OLIVER H. BEAHRS, Rochester, Minn.

Peripheral Vascular Disease: Physiology and Efficacy of a New Therapeutic Agent.
GERALD H. PRATT, New York.

Physical Medicine in the Home Treatment of Arthritis.
GORDON MARTIN and HOWARD POLLEY, Rochester, Minn.

Pollicization of the Index Finger.
ROBERT A. MURRAY, Temple, Texas.

Preliminary Ligation Technique for Carcinoma of the Sigmoid Colon.
RUPERT B. TURNBULL, Cleveland.

Resuscitation for Cardiac Arrest.
CLAUDE S. BECK, Cleveland.

Retropubic Y Plasty for Vesical Neck Obstruction.
THOMAS J. SINATRA and JAMES W. BYRNE, Brooklyn, N. Y.

Stapes Mobilization: Footplate Visualization Method.
GEORGE E. SHAMBAUGH, EUGENE L. DERLACKI, and WILEY H. HARRISON, Chicago.

Stress and the Adaptation Syndrome.
HANS SELYE, Montreal.

Surgical Correction of Atrial Septal Defects.
HOUCK BOLTON and CHARLES P. BAILEY, Philadelphia.

Technique for Proctoscopy.
RAYMOND J. JACKMAN and EDWARD R. MORGAN, Rochester, Minn.

Time and Two Women: Early Diagnosis of Cancer of the Uterus With Special Emphasis on Cytology.
JOSEPH V. MEIGS, Boston.

Urinary Infections: Etiology, Diagnosis and Treatment.
GRAYSON L. CARROLL, St. Louis, and VICTOR F. MARSHALL, New York.

Vaginal Hysterectomy for Prolapse.
FREDERICK J. HOFMEISTER, Milwaukee.

Venostomy: An Improved "Cut Down" Procedure in Infants and Children.
JAMES V. MILES JR. and LLOYD E. HARRIS, Rochester, Minn.

SPECIAL EVENING MOTION PICTURE PROGRAM

COLISEUM, ROOM 4, 4TH FLOOR

Wednesday, June 5—8 p. m.

There will be a première showing of the second film of the series "Medicine and the Law" produced by the American Medical Association in cooperation with the Wm. S. Merrell Company. This film is on the subject of professional liability.

C. JOSEPH STETLER, Director, Law Department, American Medical Association, will make brief opening comments and will introduce the following speakers:

JOSEPH F. SADUSK JR., Oakland, Calif., Chairman, Committee on Professional Liability, American Medical Association.

DAVID F. MAXWELL, President, American Bar Association.

DAVID B. ALLMAN, President, American Medical Association.

FIRST INTERNATIONAL MEDICAL FILM EXHIBITION

BARBIZON PLAZA HOTEL, THEATER

Tuesday to Friday, June 4-7

Medical films, produced in foreign countries and accepted for showing on the first international medical film program to be held in this country, are listed here in part. More than 70 films representing 20 different countries have been submitted for consideration in this program. The final program will consist of four full days of outstanding films produced abroad, representing some of the current medical research work and practices being carried on in other countries. In many instances, the author will be present to introduce his film. All films will be presented in English.

The program is presented with the cooperation of Johnson & Johnson, New Brunswick, N.

Anaphylaxis and Allergy.
PASTEUR VALLERY-RADOT and BERNARD N. HALPERN, Paris.

South American Blastomycosis.
CARLOS DA SILVA LACAZ, São Paulo, Brazil.

Communicating Hydrocephalus and Its Surgical Treatment.
M. R. KLEIN, J. LEPINTRE, and J. RENAUD, Paris.

Corneal Contact Lenses.
JOSE ALLPERIN, Buenos Aires.

Death of a Cell.
MARCEL BESSIS, Paris.

Gastric Volvulus.
LUCIEN DIAMANT-BERGER, Paris.

Interference Microscopy of Living Cells in Tissue Culture.
M. ABERCROMBIE and E. J. AMBROSE, London.

Marrow Puncture.
RADCLIFFE INFIRMARY, Oxford, England.

Multiple Deficiency Syndrome in Children.
CARLOS M. MONSON-MALICE, Guatemala, Central America.

Neuromuscular Block.
B. G. B. LUCAS, London.

Physiological and Clinical Trends in Potentialized Anesthesia: Artificial Hibernation and Neuroplegy.
HENRI LABORIT, Paris.

Treatment of the Volkman's Ischemic Contracture.
O. SCAGLIETTI, Firenzi, Italy.

Tunnelization in the Treatment of Varicocele.
EURICO BRANCO RIBEIRO, São Paulo, Brazil.

Breech Delivery.
BRUCE MAYES, Sydney, Australia.

Gait.
D. M. BROOKS and H. J. SEDDON, London.

Lower Segment Cesarean Section.
BRUCE MAYES, Sydney, Australia.

Structure and Function of the Middle Ear.
ICHIRO KIRIKAE, Tokyo.

New Progress in Endobronchial Photography and Cinematography.
J. M. DUBOIS DE MONTREYNAUD and R. J. EDWARDS, Reims, France.

Open Injuries of the Hand.
PATRICK CLARKSON, London.

Care of the Premature Baby.
K. WINNING, Sydney, Australia.

Acute Intussusception in Infants.
J. STEIGRAD, Sydney, Australia.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will be located on the third and fourth floors of the New York Coliseum. It will open Monday, June 3, at 8:30 a. m. and will close Friday, June 7, at 12:00 noon. On the intervening days, the hours will be from 8:30 a. m. to 5:30 p. m.

The public is not admitted to the Scientific Exhibit. *Admission will be restricted to physicians only from 8:30 a. m. to 12:00 noon on Tuesday, June 4, and Wednesday, June 5.*

Each section of the Scientific Assembly has arranged a group of exhibits, as in former years, dealing with its respective specialty. Emphasis is placed, however, on broad aspects of the subjects shown, rather than on specialized aspects, so that all exhibits will be of general interest.

Special features of the various sections include perinatal problems, pulmonary function testing, fresh tissue pathology, physical examinations of physicians, and general discussions of the urology exhibits. Other features include exhibits on fractures, diabetes, arthritis and rheumatism, food and nutrition, medical history, and two prize-winning exhibits selected from the National Science Fair.

SPECIAL FEATURES

Science Fair Exhibits

The Council on Scientific Assembly has arranged for the presentation of two exhibits selected from the National Science Fair in Los Angeles, in May, to be shown in the Scientific Exhibit of the American Medical Association. The two high school students who have the best exhibits in the field of biology or medicine will accompany their exhibits and will demonstrate them during the week.

Special Exhibit on Fractures

The Special Exhibit on Fractures is presented under the auspices of the following Committee:

Ralph G. Carothers, Cincinnati, Chairman.
Harry B. Hall, Minneapolis.
Charles V. Heck, Chicago.

Demonstrations will be conducted simultaneously each morning and afternoon during the meeting in each of six booths on the following subjects:

Fractures Resulting from a Fall on the Outstretched Hand.
Fractures Encountered by the Front Seat Passenger in an Automobile Crash.
Fractures About the Elbow.
Fractures of the Lower End of the Radius.
Fractures of the Tibia and Fibula.
Fractures of the Ankle.

The demonstrations will deal with basic principles for the interest of physicians in general practice. A pamphlet dealing with the essential features of the exhibit will be distributed.

The following persons are among the demonstrators who will assist the Committee in the presentation of the exhibit:

Ronald W. Adams, Brookline, Mass.
Thomas A. Angland, Yakima, Wash.
John L. Bianchi, Worcester, Mass.
Harold Ray Bohlman, Baltimore.
Roy E. Brackin, Winnetka, Ill.
Wm. H. Cassebaum, New York.
Kenneth Cristophe, Brookline, Mass.
Paul J. Collopy, Milwaukee.
Charles De Bold Jr., Poughkeepsie, N. Y.
James R. Degge, Eugene, Ore.
John L. Doherty, Boston.
Herbert C. Fett Jr., Brooklyn, N. Y.
Theodore A. Fox, Chicago.
Robert T. Gallagher, Cincinnati.
Alexander Garcia, New York.
Maurice Gershman, Far Rockaway, N. Y.
Nicholas J. Giannestras, Cincinnati.
Paul Goetowski, Lincoln, Neb.
Harold T. Hansen, South Orange, N. J.
Earl Harter, Pittsburgh.
Kenneth T. Hubbard, Maywood, Ill.
C. W. Hullinger, Springfield, Ohio.
Richard H. Jones, Minneapolis.
Edward H. Juers, Red Wing, Minn.
William J. Kisiel, Springfield, Mass.
William G. Kuhn Jr., New Brunswick, N. J.
Ralph T. Lidge, Chicago.
Richard M. Logue, Little Rock, Ark.
Walter D. Ludlum Jr., New York.
Sydney N. Lyttle, Flint, Mich.
Andrew R. Mailer, Madison, Wis.
Moore Moore Jr., Memphis, Tenn.
Frank G. Murphy, Chicago.
E. M. Neptune, Syracuse, N. Y.
Theodore Norley, West Palm Beach, Fla.
Frank G. Ober, Burlington, Iowa.
Frederick G. Rosendahl, Minneapolis.
Edmund T. Rumble Jr., Callicoon, N. Y.
Otto Salsbery, Covington, Ky.
Edmund H. Schweitzer, Cincinnati.
William J. Stewart, Columbia, Mo.
Barbara B. Stimson, Poughkeepsie, N. Y.
Luther M. Strayer Jr., Bridgeport, Conn.
S. Ralph Terhune, Birmingham, Ala.
Franklin V. Wade, Flint, Mich.
Kenneth R. Weston, Allentown, Pa.

Annual Physical Examinations for Physicians

"An Annual P. E. for Every M.D." will be presented by the Section on General Practice with the cooperation of the American Academy of General Practice, the American College of Cardiology, the National Tuberculosis Association, and the National Society for the Prevention of Blindness. Acknowledgment is made to the Sanborn Company for electrocardiograph equipment and to the Picker X-Ray Corporation for x-ray equipment.

The chairman of the committee in charge of the demonstrations is Charles E. Mc Arthur, Olympia, Wash.

The following examinations will be made in an area set aside for the purpose in the exhibit hall:

Electrocardiograms.
Chest X-rays.
Eye Examinations.

A competent corps of specialists will be on duty at all times to interpret the findings of the various tests.

Special Exhibit on Fresh Tissue Pathology

The Section on Pathology and Physiology has arranged a Special Exhibit on Fresh Tissue Pathology with the cooperation of the New York Pathological Society. Numerous photographs and transparencies will supplement and illustrate fresh specimens gathered from various hospitals and laboratories in the New York area.

The local committee in charge of the exhibit consists of the following members:

HENRY SIEGEL, Bronx Municipal Hospital Center, New York, Co-chairman.

MILTON HELPERN, Office of Chief Medical Examiner, New York, Co-chairman.

ALFRED A. ANGRIST, Albert Einstein College of Medicine, Bronx Municipal Hospital Center, New York.

MARVIN KUSCHNER, New York University–Bellevue Medical Center, New York.

JAMES R. LISA, Department of Hospitals, City of New York, Welfare Island, N. Y.

JOHN M. PEARCE, Cornell University College of Medicine–New York Hospital, New York.

FRANCIS D. SPEER, New York Medical College–Flower Fifth Avenue Hospital, New York.

WELLINGTON B. STEWART, College of Physicians and Surgeons–Presbyterian Hospital, New York.

SIGMUND L. WILENS, New York University–Bellevue Medical Center, New York.

HARRY M. ZIMMERMAN, Montefiore Hospital, New York.

The Advisory Committee, consisting of officers of the Section on Pathology and Physiology, is as follows:

SAMUEL A. LEVINSON, Chicago, Chairman.

H. RUSSELL FISHER, Los Angeles.

EDWIN F. HIRSCH, Chicago.

HUGH A. EDMONDSON, Los Angeles.

LALL G. MONTGOMERY, Muncie, Ind.

Demonstrations will be conducted continuously on a definite schedule by a large corps of competent pathologists, including guest demonstrators from teaching institutions.

J. W. ABBISS, Wilmington, Del.

MILTON ACKERMAN, Atlantic City, N. J.

OSCAR AUERBACH, East Orange, N. J.

ALFRED ANGRIST, New York.

WILLIAM A. ANTOPOL, New York.

CHAPMAN H. BINFORD, Washington, D. C.

MILTON G. BOHROD, Rochester, N. Y.

ROBERT L. BRECKENRIDGE, Camden, N. J.

CLARK EDWARD BROWN, Philadelphia.

JOHN J. CLEMMER, Albany, N. Y.

L. W. FALKINBURG, Providence, R. I.

IRA GORE, West Roxbury, Mass.

BENJAMIN HIGHLAND, Bethesda, Md.

FRANK W. KONZELMANN, Washington, D. C.

F. K. MOSTOFI, Washington, D. C.

TOBIAS WEINBERG, Baltimore.

SOLOMON WEINTRAUB, Trenton, N. J.

H. L. WOLLENWEBER, Baltimore.

ROBERT B. WRIGHT, Baltimore.

ASHER YAGUDA, Newark, N. J.

KRIKOR YARDUMIAN, Pittsburgh.

Exhibit Symposium on Arthritis and Rheumatism

The exhibit symposium on arthritis and rheumatism has been arranged by the following special committee from the American Medical Association in cooperation with the American Rheumatism Association and the Arthritis and Rheumatism Foundation.

JOHN W. SIGLER, Detroit, Chairman.

DONALD F. HILL, Tucson, Ariz.

L. MAXWELL LOCKIE, Buffalo.

A consultation booth will be available where physicians may discuss problems regarding their patients afflicted with these diseases.

Intra-Synovial Steroid Injections for Treatment of Arthritis.

JOSEPH LEE HOLLANDER, ERNEST M. BROWN JR., RALPH A. JESSAR, NATHAN M. SMUKLER, and J. RUSH SHANAHAN, University of Pennsylvania School of Medicine and Hospital, Philadelphia.

Traction for Neck and Low Back.

ARTHUR M. PRUCE and WILLIAM R. CHAMBERS, Atlanta, Ga., and SAMUEL VARCO, Buffalo.

The Hands in Arthritis and Related Conditions.

DARRELL C. CRAIN, Georgetown University Hospital, Washington, D. C.

Normal and Pathological States of Synovia.

WILLIAM N. HARSHA and J. NEWTON OWENS, University of Oklahoma School of Medicine, Oklahoma City.

X-ray Changes in Rheumatoid Arthritis.

THEODORE A. POTTER and J. LELAND SOSMAN, Robert Breck Brigham Hospital, Boston.

Joint and Bone Disease Due to Myocotic Infection.

ELAM C. TOONE JR. and JOHN J. KELLY III, McGuire Veterans Administration Hospital and Medical College of Virginia Hospital, Richmond, Va.

Human Engineering for the Disabled.

EDWARD W. LOWMAN, Institute of Physical Medicine and Rehabilitation, New York University–Bellevue Medical Center, New York.

Connective Tissue Diseases.

BERNARD M. NORCROSS and SALVATORE R. LATONA, University of Buffalo School of Medicine and Buffalo General Hospital, Buffalo.

Does Your Patient Have Gout?

L. MAXWELL LOCKIE and JOHN H. TALBOTT, University of Buffalo School of Medicine and Buffalo General Hospital, Buffalo.

Painful Non-Articular Rheumatic Disorders–Diagnosis and Treatment.

OTTO STEINBROCKER, SIDNEY BERKOWITZ, MORTIMER EHRLICH, THOMAS ARGYROS, and JOSUE CORCAS, Hospital for Joint Diseases and Lenox Hill Hospital, New York.

Infected Intervertebral Disks–Clinical and Roentgenographic Findings.

ARTHUR L. SCHERBEL and W. JAMES GARDNER, the Cleveland Clinic Foundation, Cleveland.

Cytomorphology of L-E Cell.

F. W. MCCOY and N. C. BELLIOS, Ohio State University College of Medicine, Columbus, Ohio.

Hypercortisonism in Patients with Rheumatoid Arthritis.

C. H. SLOCUMB, H. F. POLLEY, L. E. WARD and J. G. MAYNE, Mayo Clinic and Mayo Foundation, Rochester, Minn.

Information on Arthritis and Rheumatism.

R. W. LAMONT-HAVERS and RUSSELL L. CECIL, Arthritis and Rheumatism Foundation, New York.

"Do You Have a Question, Doctor?"

DONALD F. HILL, Tucson, Ariz.; L. MAXWELL LOCKIE, Buffalo; and JOHN W. SIGLER, Detroit.

Special Exhibit on Pulmonary Function Testing

The Special Exhibit on Pulmonary Function Testing is presented by the Section on Diseases of the Chest. It has been developed and continued with the help of many individuals, under the auspices of the following Committees and representatives of Government Services:

General Committee

George R. Meneely, Nashville, Tenn., Chairman.
Osler A. Abbott, Atlanta, Ga.
Albert H. Andrews Jr., Chicago.
Mortimer E. Bader, New York.
Richard A. Bader, New York.
Alvan L. Barach, New York.
Loomis Bell, New York.
Hylan A. Bickerman, New York.
Ben V. Branscomb, Birmingham, Ala.
Robert A. Bruce, Seattle.
James J. Callaway, Nashville, Tenn.
David W. Cugell, Chicago.
Alfred P. Fishman, New York.
Ward S. Fowler, Rochester, Minn.
Edward A. Gaensler, Boston.
Roy F. Goddard, Albuquerque, N. Mex.
Burgess L. Gordon, Philadelphia.
Ross C. Kory, Wood, Wis.
John S. La Due, New York.
Edward H. Lanphier, Washington, D. C.
Edwin R. Levine, Chicago.
Francis J. Lovelock, New York.
Aldo A. Luisada, Chicago.
Daniel S. Lukas, New York.
Ross L. McLean, Baltimore.
Joseph M. Merrill, Nashville, Tenn.
R. Drew Miller, Rochester, Minn.
Hurley L. Motley, Los Angeles.
Frank Princi, Cincinnati.
Lloyd H. Ramsey, Nashville, Tenn.
Dickinson W. Richards Jr., New York.
Max Sadove, Chicago.
John J. Sampson, San Francisco.
John H. Seabury, New Orleans.
Maurice S. Segal, Boston.
William W. Stead, Minneapolis.
Peter A. Theodos, Philadelphia.
J. F. Tomashefski, Columbus, Ohio.
Donald S. Tysinger Jr., Dothan, Ala.
Roger H. L. Wilson, San Francisco.
George W. Wright, Cleveland.

Local Committee (All of New York)

Alvan L. Barach, Chairman.
Mortimer E. Bader
Richard A. Bader
Loomis Bell
Hylan A. Bickerman
Alfred P. Fishman
Francis J. Lovelock
Daniel S. Lukas
Dickinson W. Richards Jr.

Representatives of Government Services

W. Clark Cooper, Cincinnati, U. S. Public Health Service.
Martin M. Cummings, Washington, D. C., Veterans Administration.
Ashton Graybiel, Pensacola, Fla., U. S. Navy.
James Wier, Denver, U. S. Army.

A "lung station," suitable for a hospital or clinic, is designed to aid in diagnosis, prognosis, therapy, and the evaluation of disability in pulmonary disease in much the same manner that a "heart station" serves the needs of clinicians concerned with heart disease.

Various members of the committees and other volunteers experienced in pulmonary function testing will be in attendance as demonstrators at all times. Each morning and each afternoon there will be two 30-minute presentations followed by a question and answer period.

Emphasis is placed on equipment that is of low initial cost; that does not require extensive shop work to modify, assemble, and maintain; and that has withstood the test of time. Methods used are sufficiently simple to be mastered by physicians and technicians without long periods of specialized training and are rapid, in the interest of adequate patient turnover. Previous training and the individual preference of the responsible physician are important factors in the selection of equipment and methods.

(The inclusion of any piece of commercially available apparatus in this exhibit does not necessarily constitute an endorsement of that particular piece in preference to a similar piece produced by another manufacturer.)

Exhibit Symposium on Perinatal Problems

The Sections on Anesthesiology, Obstetrics and Gynecology, and Pediatrics, are cooperating in a program on perinatal problems, including a group of exhibits, together with resuscitation demonstrations each morning, and question and answer conferences each afternoon in an adjoining room, under the auspices of the following committee:

George M. Wheatley, New York, Chairman.
Harold Abramson, New York.
Virginia Apgar, New York.
Carl Goldmark Jr., New York.
Peter Gruenwald, Jersey City, N. J.
Milton Helpern, New York.
Harold Jacobziner, New York.
Schuyler G. Kohl, Brooklyn, N. Y.
John Mac Iver, New York.
Frederick H. Falls, River Forest, Ill., ex officio.
F. Thomas Mitchell, Memphis, Tenn., ex officio.

Congenital Deformities and Three Approaches to Causation: Laboratory, Clinic and Field Methods.
Theodore H. Ingalls, Harvard School of Public Health, Boston.

Neonatal Lungs—X-ray Appearance in Normal Infants and in Situations of Respiratory Distress.
M. E. Pendleton and H. G. Peterson Jr., Boston Lying-In Hospital, Boston.

Perinatal Pathology—Analysis of Autopsy Material in a One Year Period 1956.
Albert M. Hand and Martha Loving, University of Tennessee College of Medicine and the City of Memphis Hospitals, Memphis, Tenn.

Pathology of Lung Expansion in the Newborn.
Peter Gruenwald and Joseph P. Donnelly, Margaret Hague Maternity Hospital, Jersey City, N. J.

Birth Interval Timer.
Schuyler G. Kohl, Louis M. Hellman and William J. Horvath, State University of New York College of Medicine, Brooklyn, N. Y.

Reducing Reproductive Hazards—How Public and Voluntary Services Assist the Private Physician.
Marian M. Crane, Children's Bureau, Department of Health, Education, and Welfare, Washington, D. C.

A Study of Fetal Cardiac Energy.
Edward H. Hon and Orvan W. Hess, Yale University School of Medicine, New Haven, Conn.

Evaluation of Intra-Uterine Fetal Environment—Fetal Electrocardiography and Electroencephalography.
Richard L. Bernstine and Winslow J. Borkowski, Jefferson Medical College Hospital, Philadelphia; and Edward M. Southern, Mount Sinai Hospital, New York.

Resuscitation of the Newborn Infant.

HAROLD ABRAMSON, Special Committee of Infant Mortality, Medical Society of the County of New York, New York.

Hebdomadal Death Alerter System of the City of Chicago.

HERMAN N. BUNDESEN, LAWRENCE LE VINE, and HAROLD BRILL, Chicago Board of Health, Chicago.

Perinatal Mortality Pathology.

FREDERICK H. FALLS and CHARLOTTE S. HOLT, Illinois State Department of Public Health, Chicago.

A New Focus—Perinatal Mortality.

GEORGE M. WHEATLEY and JOHN MAC IVER, Metropolitan Life Insurance Company, New York.

Resuscitation Demonstrations

Resuscitation demonstrations will be conducted each morning in the conference room adjoining the exhibits on perinatal problems. An opportunity will be given for all physicians in the audience to participate in the proceedings. In order to keep the audience sufficiently small, *admission will be by ticket only.* Tickets may be obtained, as long as the supply lasts, at the desk at the entrance to the conference room.

The following physicians from the Presbyterian and New York Hospitals will take part in the demonstrations which will start at 10 a. m. on Monday, June 3, and 9:30 a. m. Tuesday through Friday:

CARL GOLDMARK JR.
DUNCAN A. HOLADAY
L. STANLEY JAMES
IRWIN WEISBROT
C. EDWARD PRINCE
CORTLAND O. ROBINSON
WILLIAM N. ROTTON
BENJAMIN E. MARBURY

Conferences on Perinatal Problems

Question and answer conferences will be conducted each afternoon from Monday through Thursday in the conference room adjoining the exhibits on perinatal problems. No tickets are required for admission.

Monday, June 3—2 p. m.

Premature Rupture of Fetal Membranes.

ALAN F. GUTTMACHER, RALPH E. MOLOSHOK, LOTTE STRAUSS, and DAVID H. SCHONHOLZ, Mount Sinai Hospital, New York.

Discussion to be opened by ALEXANDER J. SCHAFFER, Johns Hopkins Medical School, Baltimore; and ROBERT C. AUSTRIAN, State University of New York College of Medicine at New York City, Brooklyn, N. Y.

Tuesday, June 4—2 p. m.

Vigorous Resuscitation.

JOSEPH P. DONNELLY, SAMUEL PRINCE, PETER GRUENWALD, and JOHN E. BARRETT, Margaret Hague Maternity Hospital, Jersey City, N. J.

Discussion to be opened by VIRGINIA APGAR, Presbyterian Hospital, New York, and CHARLES D. COOK, Massachusetts General Hospital, Boston.

Wednesday, June 5—2 p. m.

Intrauterine Distress.

LOUIS M. HELLMAN, FREDERICK L. PERL, RICHARD DAY, and CHARLES B. REINER, State University of New York College of Medicine at New York City, Brooklyn, N. Y.

Discussion to be opened by JANET HARDY, Baltimore City Health Department, Baltimore, and EDWARD H. HON, Yale University School of Medicine, New Haven, Conn.

Thursday, June 6—2 p. m.

Intestinal Atresia.

VIRGINIA APGAR, THOMAS SANTULLI, CORTLAND O. ROBINSON, GILBERT J. VOSBURGH, and WILLIAM BLANC, Presbyterian Hospital, New York.

Discussion to be opened by PETER GRUENWALD, Margaret Hague Maternity Hospital, and MARK M. RAVITCH, Baltimore City Hospitals, Baltimore.

Exhibit Symposium on Diabetes

The diabetes program, including the exhibits and the question and answer conferences, has been arranged under the chairmanship of HOWARD F. ROOT, Boston.

Diabetes Today.

HOWARD F. ROOT, ELLIOTT P. JOSLIN, PRISCILLA WHITE, ALEXANDER MARBLE, ALLEN P. JOSLIN, ROBERT F. BRADLEY, and LEO P. KRALL, Boston.

Orinase (Tolbutamide): Its Pharmacology and Clinical Application in Diabetes.

C. J. O'DONOVAN, W. L. MILLER JR., W. E. DULIN, E. J. LARSON, C. LEWIS, and A. A. FORIST, the Upjohn Company, Kalamazoo, Mich.

Sulfonylureas in Diabetes.

RACHMIEL LEVINE, GERALD W. SOBEL, ARTHUR HEINEMAN, and MANFRED WEINSTEIN, Michael Reese Hospital, Chicago.

Incidence of Diabetes and Altered Carbohydrate Metabolism in Patients with Cancer.

ARVIN S. GLICKSMAN and RULON W. RAWSON, Sloan-Kettering Institute, Memorial Center, New York.

The Effectiveness of an Oral Anti-Diabetic Compound Tolbutamide—Methods of Selection of Patients for Therapy.

CHARLES WELLER, Grasslands Hospital, Valhalla, N. Y.

Skin Manifestations of Diabetes Mellitus.

W. L. LOWRIE, H. L. JOHNSON, W. E. REDFERN, J. B. BRYAN, F. W. WHITEHOUSE, and E. KISH, Henry Ford Hospital, Detroit.

Pathology of Diabetes.

FREDERICK W. WILLIAMS and MARSHALL I. HEWITT, American Diabetes Association, Inc., New York.

Diabetes Conferences

The question and answer conferences on diabetes will be held in a conference room adjoining the diabetes exhibits.

Monday, June 3—9:30 a. m.

HOWARD F. ROOT, Boston, Presiding.

9:30 a. m. **Inclusion of Essential Fatty Acids in Diabetic Diets.** LAURENCE W. KINSELL, Oakland, Calif.

10:00 a. m. **Acidosis.** HOWARD F. ROOT, Boston.

10:30 a. m. **Pregnancy Problems.** PRISCILLA WHITE, Boston.

11:00 a. m. **Insulin Action.** RACHMIEL LEVINE, Chicago.

11:30 a. m. **Office Treatment.** ALLEN P. JOSLIN, Boston.

12:00 noon *Panel on Nature of Diabetes.*
ELLIOTT P. JOSLIN, Boston, Moderator.
Participants: LAURENCE W. KINSELL, Oakland, Calif.; ALEXANDER MARBLE and HOWARD F. ROOT, Boston; RACHMIEL LEVINE, Chicago; and ARNOLD LAZAROW, Minneapolis.

1:00 p. m. **Experiments with Insulin.** ARNOLD LAZAROW, Minneapolis.

1:30 p. m. **Errors in Treatment.** HENRY T. RICKETTS, Chicago.

2:00 p. m. **Insulin Hypoglycemia.** EDGAR HAUNZ, Grand Forks, N. D.

2:30 p. m. **Treatment with Sulfonamides.**
ALEXANDER MARBLE, Boston.

3:00 p. m. **The Abuse of Insulin.**
GEORGE E. ANDERSON, New York.

3:30 p. m. **Surgical Choices in Diabetes.**
FRANK C. WHEELOCK, Boston.

Tuesday, June 3—9:30 a. m.

HOWARD F. ROOT, Boston, Presiding.

9:30 a. m. **Complications Arising During the Therapy of Diabetic Acidosis and Coma.**
THOMAS H. MCGAVACK, New York.

10:00 a. m. **Juvenile Diabetes.** PRISCILLA WHITE, Boston.

10:30 a. m. **Charcat Joint Diabetes Mellitus.**
WILLIAM H. OLMSTED, St. Louis.

11:00 a. m. **Oral Hypoglycemic Agents.**
GEORGE HAMWI, Columbus, Ohio.

11:30 a. m. **Amputations in Diabetics.**
BEVERLY SMITH, New York.

12:00 noon *Panel on Oral Hypoglycemic Agents in Treatment.*
Participants: PRISCILLA WHITE, HOWARD F. ROOT, LEO P. KRALL, Boston, and GEORGE HAMWI, Columbus, Ohio.

1:00 p. m. **General Medical Treatment.**
EDWIN W. GATES, Niagara Falls, N. Y.

1:30 p. m. **Treatment of Diabetic Acidosis.**
KERMIT PINES, New York.

2:00 p. m. **Brittle Diabetes.** E. PAUL SHERILAN, Denver.

2:30 p. m. **Control of Youthful Diabetics.**
GEORGE F. SCHMITT JR., Miami, Fla.

3:00 p. m. **Hypoglycemia—Diagnosis and Treatment.**
LEO P. KRALL, Boston.

3:30 p. m. **Observations with Sulfonylurea.**
ARTHUR R. COLWELL JR., Chicago.

Wednesday, June 5—9:30 a. m.

HOWARD F. ROOT, Boston, Presiding.

9:30 a. m. **Diabetic Vascular Disease.**
IRVING P. GRAFF, *New York.*

10:00 a. m. **Infections of Kidney: Papillitis.**
FRED WHITEHOUSE, Detroit.

10:30 a. m. **Six-Hour Method of Managing Acutely Complicated Diabetes.** DONALD O. BELL, Evanston, Ill.

11:00 a. m. **Skin Complications.**
W. WALLACE DYER, Philadelphia.

11:30 a. m. **New Observations in Pregnant Diabetics.**
HUGH L. C. WILKERSON, Boston.

12:00 noon *Panel on Complications: Renal, Cardiac, and Ocular.*
Participants: HENRY MARKS, New York; FRED WHITEHOUSE, Detroit; ROBERT F. BRADLEY and HOWARD F. ROOT, Boston.

1:00 p. m. **Medico-Surgical Problems.**
FREDERICK W. WILLIAMS, New York.

1:30 p. m. **Pre-Clinical Stage of Diabetes.**
HENRY MARKS, New York.

2:00 p. m. **Surgery and Diabetes.** L. S. MCKITTRICK, Boston.

2:30 p. m. **Diabetic Control in Childhood.**
A. KANTROW, Flushing, N. Y.

3:00 p. m. **Neuropathy of Diabetes.**
ROBERT F. BRADLEY, Boston.

3:30 p. m. **Diabetic Diet.** MARTIN G. GOLDNER, New York.

Thursday, June 6—10 a. m.

LEO P. KRALL, Boston, Presiding.

10:00 a. m. **Kimmelstiel-Wilson Disease.**
HAROLD RIFKIN, New York.

10:30 a. m. **Insulin Therapy.** GARFIELD DUNCAN, Philadelphia.

11:00 a. m. **Insulin Resistance.**
H. B. MULHOLLAND, Charlottesville, Va.

11:30 a. m. **Problems in Treatment.**
CHARLES WELLER, Larchmont, N. Y.

12:00 noon *Panel on Management of Unstable Diabetes.*
GARFIELD DUNCAN, Philadelphia, Moderator.
Participants: HERBERT POLLACK, New York, ROBERT F. BRADLEY and LEO P. KRALL, Boston.

Thursday, June 6—1 p. m.

ROBERT F. BRADLEY, Boston, Presiding.

1:00 p. m. **Statistics in Diabetes.**
HERBERT MARKS and HERBERT POLLACK, New York.

1:30 p. m. **High Fat Versus Low Fat Diabetic Diets.**
HERBERT POLLOCK, New York.

2:00 p. m. **Studies in Treatment of Retinopathy.**
LEO P. KRALL, Boston, and BENJAMIN T. ASHE, New York.

2:30 p. m. **The Value of Teaching a Diabetic the Concept of Volume of Urine in Connection with His Management.** BENJAMIN T. ASHE, New York.

3:00 p. m. **Cardiovascular Disease and Management.**
ROBERT F. BRADLEY, Boston.

Friday, June 7—10 a. m.

10:00 a. m. **Treatment with Oral Hypoglycemic Agents.**
LEO P. KRALL, Boston.

10:30 a. m. **Coronary Heart Disease.**
ABRAHAM H. FRIEDMAN, New York.

Exhibit Symposium on Foods and Nutrition

The exhibit symposium and question and answer conferences on foods and nutrition have been arranged in cooperation with the following committee:

CLEMENT A. SMITH, Boston, Chairman.
WILLIAM J. DARBY, Nashville, Tenn.
GEORGE R. COWGILL, New Haven, Conn.
PHILIP L. WHITE, Chicago.

Infant Feeding Practices in Hospital Maternity Nurseries. (Survey of 1,900 United States Hospitals)
HERMAN F. MEYER, Northwestern University Medical School and Children's Memorial Hospital, Chicago.

Weight Control.
ROBERT H. BARNES, University of Washington School of Medicine, Seattle.

Diet Therapy.
ELIZABETH MUNVES and CLARA ZEMPEL, American Dietetic Association, Chicago.

Serum Iron (SI) and Total Iron-Binding Capacity (TIBC) in Liver Disease.

EMANUEL E. MANDEL, LEONA M. NIESPODZIANY, and JEANNE A. COOPER, Chicago Medical School, Northwestern University Medical School and Veterans Administration Research Hospital, Chicago.

Intra-Muscular Iron for the Treatment of Iron Deficiency Anemia in Infancy.

RALPH O. WALLERSTEIN and SILVIJA HOAG, Children's Hospital, San Francisco.

Congential Handicaps from Malnutrition: The Importance of Adequate Nutrition Preconceptually.

E. L. SEVERINGHAUS and H. PFALTZ, Hoffman-La Roche, Inc., Nutley, N. J.

Food for Health—Nutrition Essentials: Quantity of Food, Variety, Clean Handling, Freedom from Diseases.

FRED L. SOPER, Pan American Sanitary Bureau, Regional Office of the World Health Organization, Washington, D. C.

Lipotropic Vitamin Therapy—Effect upon Mortality Rate in Hypertensive Hypercholesterolemic Subjects.

J. Q. GRIFFITH JR., and B. MARR LANMAN, New York.

Foods in Oral Electrolyte Therapy.

PHILIP L. WHITE, EUGENE H. STEVENSON, and MARY JANE KIBLER, Council on Foods and Nutrition, American Medical Association, Chicago.

Conferences on Diet as a Preventive and Therapeutic Tool for the Doctor

The question and answer conferences will be conducted each morning in a conference room adjoining the exhibits on foods and nutrition.

Monday, June 3—9:30 a. m.

Diet and Reproduction

JOHN YOUMANS, Nashville, Tenn., Moderator.

9:30 a. m. **In Pregnancy.** WILLIAM J. MCGANITY, Nashville, Tenn.

10:15 a. m. **In Lactation.** WILLIAM J. DIECKMANN, Chicago.

11:00 a. m. **In Toxemia.** LEON C. CHESLEY, Brooklyn, N.Y.

11:45 a. m. **In Infertility.** M. EDWARDS DAVIS, Chicago.

Tuesday, June 4—9 a. m.

Diet in Cardiovascular-Renal Disease

JOHN YOUMANS, Nashville, Tenn., Moderator.

9:00 a. m. **How to Use Sodium Reduction.** CHARLES K. FRIEDBERG, New York.

9:45 a. m. **Reduction of Dietary Fat and Blood Cholesterol in Prevention of Cardiovascular Disease.** GRACE A. GOLDSMITH, New Orleans.

10:30 a. m. **Reduction of Dietary Fat and Blood Cholesterol in Treatment of Cardiovascular Disease.** GRACE A. GOLDSMITH, New Orleans.

11:15 a. m. **Diet in Renal Disease.** FRANKLIN H. EPSTEIN, New Haven, Conn.

Wednesday, June 5—9 a. m.

Diet in Other Problems of Internal Medicine

CHARLES S. DAVIDSON, Boston, Moderator.

9:00 a. m. **In Peptic Ulcer and the Gastrointestinal Disorders.** HOWARD M. SPIRO, New Haven, Conn.

9:40 a. m. **In Allergy Management.** JEROME GLASER, Rochester, N.Y.

10:20 a. m. **In Hepatitis.** CHARLES S. DAVIDSON, Boston

11:00 a. m. **In the Care of the Aged.** ROBERT S. GOODHART, New York.

11:40 a. m. **Parenteral Feeding.** RAYMOND MENG, Nashville, Tenn.

Thursday, June 6—9 a. m.

Diet in Pediatrics

CLEMENT A. SMITH, Boston, Moderator.

9:00 a. m. **Infant Feeding.** CLEMENT A. SMITH, Boston.

9:45 a. m. **Prescription of Vitamin Supplements, Iron, Calcium, Copper, etc.** ROBERT L. JACKSON, Columbia, Mo.

10:30 a. m. **Nutritional Replacement Therapy.** ROBERT E. COOKE, Baltimore.

11:15 a. m. **Emotional Problems, Anorexia, and Obesity.** HARRY BAKWIN, New York.

Friday, June 7—9 a. m.

Weight Reduction

PHILIP L. WHITE, Chicago, Moderator.

9:00 a. m. **General.** ROBERT E. OLSON, Pittsburgh.

9:40 a. m. **In Pregnancy.** BERTHA SHAPLEY BURKE, Boston.

10:20 a. m. **In Prevention and Treatment of Cardiovascular Disease.** FREDRIK J. STARE, Boston.

11:00 a. m. **In Children and Adolescents.** CHARLOTTE M. YOUNG, Ithaca, N.Y.

11:40 a. m. **In Diabetes Mellitus.** HERBERT POLLACK, New York.

A History of Medicine in Pictures

A History of Medicine in Pictures will be presented with the cooperation of Parke, Davis & Company, Detroit. Seven paintings, the first in a large series, depict major events and personalities in the medical profession during the past 5,000 years and were produced by ROBERT A. THOM, with GEORGE A. BENDER as editor and ERWIN H. ACKERNECHT as advisor. The following paintings are shown in the exhibit:

Medicine in Ancient Egypt.
An Egyptian physician treating a patient with tetanus (about 1500-1400 B.C.).

The Code of Hammurabi.
A Babylonian physician defending his professional practices against a dissatisfied patient who seeks to invoke the drastic penalties of the Code of Hammurabi (about 2000 B.C.).

Trephening in Ancient Peru.
A Peruvian physician beginning a trephening operation with the aid of knives of glass-hard obsidian, a crude plant narcotic, cotton, and bandages (First Century A.D.).

The Temples and Cult of Asclepios.
Sick and afflicted pilgrims flocking to a Grecian temple to be healed (500 B.C.-500 A.D.).

Susruta—a Surgeon of Old India.
Susruta, famed Hindu surgeon, is depicted in the home of a noble of ancient India, about to begin an otoplastic operation.

Hippocrates—Medicine Becomes a Science.
Hippocrates palpates a young patient and attempts to soothe a worried mother (Fifth Century B.C.).

Primitive Medicine.
A Navajo Indian "singer" (medicine man) participating in the Mountain Chant's nine-day ceremonies in a medicine "hogan."

SECTION EXHIBITS

Each of the 21 sections of the Scientific Assembly has arranged a group of exhibits dealing with the various branches of medicine.

Section on Anesthesiology

The representative to the Scientific Exhibit from the Section on Anesthesiology is Edwin L. Rushia, Augusta, Ga. The section is cooperating in the demonstrations on perinatal problems.

Evaluation of Anesthetic Agents by Means of Evoked Central Nervous System Responses.

Hamilton S. Davis, William F. Collins, Clark T. Randt, and William H. Dillon, Western Reserve University School of Medicine, Cleveland.

Elective Cardiac Arrest in Operations on the Open Heart.

Donald E. Hale, Willem J. Kolff, and Donald B. Effler, Cleveland Clinic, Cleveland.

Hypnosis in Anesthesiology.

Milton J. Marmer, Cedars of Lebanon Hospital and University of California at Los Angeles School of Medicine, Los Angeles.

Plastic Diorama Comparing Internal and External Hypothermia.

H. B. Benjamin, Marvin Wagner, Harry K. Ihrig, and Walter Zeit, Marquette University School of Medicine, Milwaukee.

Promethazine in Surgery and Obstetrics.

Milton H. Adelman, Elliott Jacobson, Philip Lief, and Seymour Miller, Mount Sinai Hospital, New York.

Absorption of Local Anesthetics.

John Adriani and Donovan Campbell, Charity Hospital and Louisiana State University School of Medicine, New Orleans.

Quiescence in Pediatric Surgery.

Max S. Sadove and Theodore J. Frye, University of Illinois Research and Educational Hospitals, Chicago.

A Simple Method for Blood Volume Determinations.

S. N. Albert, W. O. Swan, and W. A. Spencer, District of Columbia General Hospital, Washington, D. C.

Servomechanisms in Anesthesia Control.

J. Weldon Bellville, Naomi Sager, and William S. Howland, Memorial Hospital and the Sloan-Kettering Institute, New York.

Comparative Study of Methitural, Thiopental, Thiamylal and Hexobarbital: With Special Reference to Respiratory Effects.

Barnett A. Greene, Samuel Berkowitz, and Bernard S. Goffen, Unity and Adelphia Hospitals, Brooklyn, N. Y.

An Evaluation of Antiemetic Drugs in the Control of Postoperative Nausea and Vomiting.

E. P. Didier and H. C. Slocum, Walter Reed Army Hospital, Washington, D. C.

Esophageal Intubation: Its Role in Preventing Aspiration of Vomitus in the Comatose Patient.

Dante Bizzarri and Joseph Giuffrida, Columbus Hospital and New York Medical College, New York.

Caudal Anesthesia.

E. A. Rovenstine and Jack Milowsky, New York University–Bellevue Medical Center, New York.

Fluothane: A Potent, Nonexplosive Inhalation Anesthetic.

C. R. Stephen, L. W. Fabian, M. Bourgeois-Gavardin, D. C. Grosskreutz, and J. Coughlin, Duke University Hospital, Durham, N. C.

A New Synthetic Analgesic—Anileridine.

Irving M. Riffin, Berthold Schwarz, Milton E. Landman, Rudolf Preisig, and Henry H. Wheaton, St. Vincent's Hospital, Montclair, N. J.

Clinical Usefulness of Combinations of Narcotics with Narcotic-Antagonists.

Phillip S. Marcus, Chester W. White Jr., and Robert Megibian, Boston City Hospital, Boston.

Section on Dermatology

The representative to the Scientific Exhibit from the Section on Dermatology is Stanley E. Huff, Evanston, Ill.

Tranquilizers in Dermatology.

Harry M. Robinson Jr., Raymond C. V. Robinson, and John F. Strahan, University of Maryland School of Medicine, Baltimore.

The Role of Soaps and Synthetic Detergents in Hand Dermatitis.

Raymond R. Suskind, Samuel R. Scheen, and Morris Meister, University of Cincinnati College of Medicine, Cincinnati.

Pruritus.

Frank C. Combes and Milton Reisch, New York.

Innervation of the Skin: Recent Findings in Representative Areas of Human Tissue.

R. K. Winkelmann, W. H. Hollinshead, and A. H. Bulbulian, Mayo Clinic and Mayo Foundation, Rochester, Minn.

Alopecia Capitis: General Etiologic Survey.

Julius E. Ginsberg, Chicago, and Bruce Bairstow, Waukegan, Ill., Northwestern University Medical School.

The Effects of Relaxin on Connective Tissue.

Robert J. Boucek, Nancy L. Nobel, Gus G. Casten, Harry R. Elden, Kung-Ying T. Kao, and J. Frederick Woessner Jr., the Howard Hughes Medical Institute, Miami, Fla.

The Nonvenereal Diseases of the Genitals: The Differential Diagnosis of Genital Lesions.

John Francis Wilson, Jefferson Medical College, Philadelphia.

Epidermal and Dermal Melanocytes.

Arnold A. Zimmermann and Samuel W. Becker Jr., University of Illinois College of Medicine, Chicago.

Introduction to Human Genetics for the Dermatologist.

Helen Ollendorff Curth and Bertha M. Aschner, Columbia University College of Physicians and Surgeons, New York.

Dermatologic Standardization of Perfumes.

Raymond A. Osbourn, Thomas W. Tusing, and Francis P. Coombs, Georgetown University Medical Center, Washington, D. C.

Section on Diseases of the Chest

The representative to the Scientific Exhibit from the Section on Diseases of the Chest is Edwin R. Levine, Chicago. The Section is also sponsoring the *Special Exhibit on Pulmonary Function Testing.*

Mediastinal Tumors: Diagnosis and Treatment.

William L. Watson, John L. Pool, Eugene E. Clifton, Raymond K. J. Luomanen, William G. Cahan, and John T. Goodner, Memorial Center for Cancer and Allied Diseases, New York.

Pleuroplasty.

Robert Klopstock and Arthur A. Siebens, Veterans Administration Hospital, Brooklyn, N. Y., and State University of New York College of Medicine at New York City.

Crushing Injuries of the Chest: A New Method of Treatment by Mechanical Hyperventilation.

Edward E. Avery, E. Trier Mörch, John J. Cunningham, and Jerome R. Head, University of Chicago, the School of Medicine, and Northwestern University Medical School, Chicago.

The Solitary Round Dense Pulmonary Lesion.

Samuel Cohen and Frank Bortone, B. S. Pollak Hospital for Chest Diseases, Jersey City, N. J.

Bronchial Asthma.

John W. Irwin, Irving H. Itkin, Sandylee Weille, and Nancy Little, Massachusetts General Hospital, Boston.

Time to Test: Tuberculin Skin Test in Modern Practice.

Julius L. Wilson, American Trudeau Society and National Tuberculosis Association, New York.

Long-Range Home Chemotherapy of Tuberculosis.

Alfred S. Dooneief, Montefiore Hospital, New York.

The Active Management of Pulmonary Tuberculosis in Pregnancy.

Irving J. Selikoff, Henry L. Dorfmann and Alan F. Guttmacher, the Mount Sinai Hospital, New York.

Pulmonary Histoplasmosis on the Isthmus of Panama.

Rodolfo V. Young and Ferruccio Bertoli, Gorgas Hospital, Ancon, Canal Zone.

Pulmonary Cavities.

E. D. Peasley and Oscar Kanner, Veterans Administration Hospital, Oteen, N. C.

Lung Cancer and Smoking: Relationship and Changes in the Bronchial Epithelium.

Oscar Auerbach, J. Brewster Gere, Harold J. Smolin, Jerome B. Forman, Gerald E. Muehsam, Joseph M. Pawlowski, and Arthur Purdy Stout, Veterans Administration Hospital, East Orange, N. J.

Cardiac Aneurysms and Their Surgical Correction.

Houck Bolton and William Likoff, Bailey Clinic, Philadelphia.

Heart Wounds: Recognition and Management.

Aubre de L. Maynard and Emil A. Naclerio, Harlem Hospital, New York.

Diagnosis and Treatment of Pulmonary Arteriovenous Fistulas.

Israel Steinberg, John A. Evans, and Nathaniel Finby, the New York Hospital–Cornell Medical Center, New York.

Pulmonic Stenosis.

George N. Bedell, Johann L. Ehrenhaft, James W. Culbertson, Lewis E. January, Ernest O. Theilen, and John W. Eckstein, State University of Iowa, Iowa City.

The Results of the Combined Medical and Surgical Treatment of Patients with Coronary Disease.

M. S. Mazel, Ira Schnaer, Max Bernstein, Irwin Callen, Alfred Bonk, Laurence Wu, Salamon Boros, and Leona McClimans, Edgewater Hospital, Chicago.

Endarterectomy for Coronary Arterial Occlusion.

Charles P. Bailey and Henry T. Nichols, Hahnemann Medical College and Hospital, Philadelphia.

Therapeutic Management: Bronchial Obstruction—Bronchospasm.

Maurice S. Segal, Merrill M. Goldstein, and Ernst O. Attinger, Tufts University School of Medicine and Boston City Hospital, Boston.

Bronchial Drainage: Physiologic and Mechanical Aids to Bronchial Evacuation.

Edwin R. Levine and Abel Froman, Chicago Medical School and Edgewater Hospital, Chicago.

Section on Experimental Medicine and Therapeutics

The representative to the Scientific Exhibit from the Section on Experimental Medicine and Therapeutics is Joseph F. Ross, Los Angeles.

Experimental and Statistical Methods in Clinical Investigation.

Leo J. Cass, University Health Services, Harvard University, Cambridge, Mass., and Willem S. Frederick, Boston.

N^1-Betaphenethylforamidinyl iminourea: A New Oral Insulin Replacement Agent.

Julius Pomeranze, G. J. Mouratoff, and Herley Fujiy, New York Medical College, Metropolitan Medical Center and the Bird S. Coler Memorial Home and Hospital, New York.

Estrogen Biosynthesis by Postmenopausal Human Ovaries.

H. M. Lemon, H. H. Wotiz, S. C. Sommers, L. Parsons, and J. W. Davis, Boston University School of Medicine and Massachusetts Memorial Hospitals, Boston.

Chlorothiazide: A Saluretic Agent.

Karl Beyer, John Beem, Elmer Alpert, Augustus Gibson, and Charles E. Lyght, Merck Sharp & Dohme Research Laboratories, West Point, Pa.

The Pathology of Lathyrism: A Nutritional Problem.

Zolton T. Wirtschafter, Veterans Administration Hospital and University of Oregon Medical School, Portland, Ore.

Investigation of Tumor Cells in the Blood.

Avery Sandberg and George E. Moore, Roswell Park Memorial Institute, Buffalo.

Hypophysectomy in Man.

Olof H. Pearson, Bronson S. Ray, Mortimer B. Lipsett, Henry Hood, and Ernest Greenberg, Sloan-Kettering Institute, Memorial Center, and New York Hospital, Cornell University Medical Center, New York.

Oral Anticoagulants: Comparative Study.

Ancel Blaustein, Booth Memorial Hospital, New York.

Experimental Investigation of Antitussives: A Controlled Study of the Cough Mechanisms.

S. C. Wang, W. M. Benson, P. L. Stefko, and T. C. Fleming, Columbia University College of Physicians and Surgeons, New York, and Hoffmann-LaRoche, Inc., Nutley, N. J.

Anisindone: A New Anticoagulant with Unusual Properties.

Kurt Lange, Eli Perchuk, and Murray M. Mahl, New York Medical College, New York.

Isonicotinic Acid Hydrazides in the Treatment of Tuberculous Meningitis.

Emanuel Appelbaum and Charles Abler, New York City Department of Health, New York.

Intermittent Peritoneal Lavage.

Lewis Waters, Arthur Grollman, Patricia O'Neill, and Ruth Sanders, University of Texas–Southwestern Medical College, Dallas, Texas.

Radioactive Heparin—Synthesis, Metabolism and Circulation of Radioactive Heparin.

HAROLD B. EIBER, ISIDORE DANISHEFSKY, FRANK J. BORRELLI, LINN J. BOYD, and JOSEPH LITWINS, New York Medical College, New York.

A Therapeutic Appraisal of Antiemetic Agents.

JOHN H. MOYER, SAM A. KINARD, and PAUL K. CONNER JR., Baylor University College of Medicine, Houston, Texas.

Studies of Serum B-12 Concentrations in Man.

WILLIAM P. BOGER, S. CLYDE STRICKLAND, GILBERT M. BAYNE, and LEMUEL D. WRIGHT, Norristown State Hospital, Norristown, Pa.

Clinical Experience with a New Blood Dialyzer and Blood Pump.

ARTHUR E. MACNEILL, JOHN E. DOYLE, ROLAND ANTHONE, SIDNEY ANTHONE, and ARLINE RUPPENTHAL, University of Buffalo School of Medicine, Buffalo.

Natural Interactions between Blood Cells and Plasma Proteins.

JAMES L. TULLIS and DOUGLAS M. SURGENOR, Harvard University and Protein Foundation, Boston.

A New Antithrombotic Agent.

BENJAMIN MANCHESTER and LAWRENCE E. PUTNAM, George Washington University School of Medicine and District of Columbia General Hospital, Washington, D. C.

Endarterectomy in the Direct Surgery of Arteriosclerosis.

JACK A. CANNON, I. GEORGE KAWAKAMI, and WILEY F. PARKER, University of California at Los Angeles School of Medicine, Los Angeles.

Plasma Erythropoietic Factors.

FRANK H. BETHELL, JAMES W. LINMAN, DONALD R. KORST, and RONALD C. BISHOP, Simpson Memorial Institute, University of Michigan and Veterans Administration Hospital, Ann Arbor, Mich., and Northwestern University and Veterans Administration Research Hospital, Chicago.

The Effect of Prednisone in the Treatment of Refractory Cardiac Edema.

ALLEN D. RIEMER, University of Colorado School of Medicine, Denver.

Metisteroids in Experimental Toxemias.

H. SENECA, O. K. TROC, and A. JOHNSON, College of Physicians and Surgeons, Columbia University and Presbyterian Hospital, New York.

Streptovaricin: An Antibiotic Orally Effective in Tuberculosis.

P. SIMINOFF, G. M. SAVAGE, L. E. RHULAND, R. M. MCCUNE JR., H. R. REAMES, and WALSH MCDERMOTT, the Upjohn Company, Kalamazoo, Mich., and Cornell University Medical College, New York.

Immunologic Aspects of Leukemias and Malignancies.

MARIO STEFANINI, St. Elizabeth Hospital and Tufts University School of Medicine, Boston.

The Gene in Modern Medicine.

E. J. GRACE, Grace Medical Group, Brooklyn, N. Y., and R. N. MITRA, Calcutta Medical College Hospital, Calcutta.

Studies on Leukocyte Antibody.

STUART C. FINCH and KATHERINE D. DETRE, Yale University School of Medicine, New Haven, Conn.

Comparison of the Effects of Vasodilator Drugs (Azapetine Phosphate) on the Conjunctival and Digital Arteries.

J. M. STALLWORTH, J. V. JEFFORDS, and W. H. LEE JR., Medical College of South Carolina and Roper Hospital, Charleston, S. C.

The Virus Etiology of Leukemia.

STEVEN O. SCHWARTZ, HAROLD M. SCHOOLMAN, PAUL B. SZANTO, WILMA SPURRIER, and LEROY YATES, Hektoen Institute for Medical Research of the Cook County Hospital, Chicago.

A Comparison of Propoxyphene and Codeine.

CHARLES M. GRUBER JR. and STANLEY M. CHERNISH, Lilly Laboratory for Clinical Research, Indianapolis General Hospital, Indianapolis.

Pancreatic Action of the Sulfonylureas.

ARTHUR R. COLWELL JR., JOHN A. COLWELL, and ARTHUR R. COLWELL SR., Northwestern University Medical School, Chicago.

Magnetic Recording in Medicine.

ROBERT D. TSCHIRGI and J. LANGDON TAYLOR, University of California at Los Angeles School of Medicine, Los Angeles.

Section on Gastroenterology and Proctology

The representatives to the Scientific Exhibit from the Section on Gastroenterology and Proctology are GEORGE GORDON MCHARDY, New Orleans, and WILLARD H. BERNHOFT, Buffalo.

Tubeless Gastric Analysis: A Urinary Color Test.

HARRY L. SEGAL, LEON L. MILLER, and ELIZABETH J. PLUMB, University of Rochester School of Medicine and Dentistry, Rochester, N. Y.

Current Status of Intravenous Cholecystography and Cholangiography.

J. EDWARD BERK and HOWARD H. FEIGELSON, Sinai Hospital of Detroit and Wayne State University College of Medicine, Detroit.

Duodenal Loop Changes in Posterior Penetrating Duodental Ulcer.

J. GEORGE TEPLICK, Kensington Hospital, Philadelphia.

Duodenal Deformities Other Than Classical Duodenal Ulcer.

CLARENCE C. PEARSON and RICHARD F. JONES, the Mason Clinic, Seattle.

Interscapular Tenderness—A New Sign in Peptic Ulcer.

GOLDA R. NOBEL, BERNARD D. JUDOVICH,† and IRWIN J. PINCUS, Graduate Hospital, University of Pennsylvania, Philadelphia.

†Deceased.

Advances in the Treatment of Intestinal Helminth Infections.

CLYDE SWARTZWELDER, JOSEPH H. MILLER, ROBERT W. SAPPENFIELD, and WILLIAM W. FRYE, Louisiana State University School of Medicine, New Orleans.

Clinical Significance of Uropepsin in Gastrointestinal Diseases.

J. ALFRED RIDER, HUGO C. MOELLER, JOHN O. GIBBS, JOYCE SWADER, LOURDES F. AGCAOILI, JERE DEROIN, IRA CLARK, and ALFRED ANDEREGG, University of California School of Medicine, San Francisco.

Rectal Prolapse: The Orr Suspension Treatment.

JOHN B. FLOYD JR., RUFUS ALLEY, BERNARD ROSENBERG, and CHRISTOPHER SOUTHWICK, St. Joseph Hospital, Lexington, Ky., and 3380th Air Force Base Hospital, Keesler Field, Miss.

Rectal and Colonic Polyps.

GUY L. KRATZER and HOWARD D. TRIMPI, Allentown, Pa.

Visualizing the Nonvisualized Gallbladder.

J. RUSSELL TWISS and LEE GILLETTE, New York.

Surgical Management of Ulcerative Colitis.

LUCIUS D. HILL, CALEB S. STONE JR., and CLARENCE C. PEARSON, the Mason Clinic, Seattle.

Gastrointestinal Cancer: Definitive Diagnosis by Exfoliative Cytology.

HOWARD F. RASKIN, JOSEPH B. KIRSNER, WALTER L. PALMER, SYLVIA PLETICKA, and WILLARD YAREMA, University of Chicago, the School of Medicine, Chicago.

Interasplenic Approach to the Portal Circulation.

W. D. DAVIS JR., STANLEY REICHMAN, RICHARD GORLIN, J. P. STORAASLI, and H. M. BATSON JR., Ochsner Clinic, Tulane University School of Medicine, New Orleans, and U. S. Naval Hospital, Portsmouth, Va.

Pain Patterns in Abdominal Diseases: Sites and Behavior of Pain in Certain Common Diseases of the Upper Abdomen.

L. A. SMITH, N. A. CHRISTENSEN, N. O. HANSON, D. E. RALSTON, R. W. P. ACHOR, K. G. BERGE, and A. H. BULBULIAN, Mayo Clinic and Mayo Foundation, Rochester, Minn.

Section on General Practice

The representative to the Scientific Exhibit from the Section on General Practice is I. PHILLIPS FROHMAN, Washington, D. C. The Section is conducting physical examinations for physicians.

Cytologic Techniques for Office and Clinic: Uterine and Gastric Cancer Control.

H. E. NIEBURGS, Beth El Hospital, Division of Cancer Control and Research and New York City Department of Health, New York.

Pulmonary Tuberculosis and Pulmonary Carcinoma.

PH. SCHWARTZ, Warren State Hospital, Warren, Pa.

Cancer of the Head and Neck as Seen by the Physician in His Office.

BREWSTER S. MILLER, American Cancer Society, New York.

Abrasion Microbiopsy Instruments for Early Cancer Diagnosis.

KENNETH S. MACLEAN, the Cytology Institute for Cancer Research, New York.

Hypogammaglobulinemia and Agammaglobulinemia.

BEACH BARRETT and WADE VOLWILER, University of Washington School of Medicine, Seattle.

Pain: Referred Pain—Sciatica in Back Diagnosis and Treatment.

GEORGE S. HACKETT, Mercy Hospital, Canton, Ohio.

Headache Clinic.

LESTER S. BLUMENTHAL and MARVIN FUCHS, George Washington University, Washington, D. C.

Differential Diagnosis of Dermatoses of the Feet.

ARTHUR S. SPANGLER, Harvard Medical School and Massachusetts General Hospital, Boston.

Diuretics: Pharmacological Action and Clinical Effects.

ARTHUR C. DEGRAFF, LEONARD GUTNER, LAWRENCE KRYLE, WALTER NEWMAN, SIDNEY DANN, and HERBERT S. KUPPERMAN, New York University and Bellevue Medical Center, and Veterans Administration Hospital, New York.

The Body Fluid Imbalances: A Bird's Eye View.

W. D. SNIVELY JR. and MICHAEL J. SWEENEY, St. Mary's Hospital, Evansville, Ind.

Emergency Resuscitation.

JAMES O. ELAM and DAVID G. GREENE, Roswell Park Memorial Institute, Buffalo.

Glaucoma—Your Medical Problem: Cause 12% of Blindness. Will You Help?

MORTIMER CHOLST, ALFONSE CINOTTI, SEYMOUR GOODSTEIN, and CONRAD BERENS, New York Eye and Ear Infirmary and the Ophthalmological Foundation, Inc., New York.

The Generalist Looks at Constipation.

W. E. HENRICKSON, Henrickson Clinic, Poplar Bluff, Mo.

Treatment of Tension Syndromes of the Middle Years.

B. WHEELER JENKINS, Germantown Hospital, Philadelphia.

Plastic Surgery Seen in General Practice.

MCCARTHY DEMERE, Memphis, Tenn.

Flying Patients: Flying Physicians Association.

R. J. VASTINE JR., Buchanan, Mich.; H. A. HEISE, Milwaukee; J. T. FLYNN, New York; E. N. ZINSCHLAG, Mattoon, Ill.; S. D. SULLENBERGER, Dandridge, Tenn.; C. M. STARR, North Hollywood, Calif.; and M. E. DEGROFF, Tulsa, Okla., Flying Physicians Association.

Ectylurea: A New Calmative for the Relief of Anxiety and Tension States.

FRANK V. Z. LINN and M. M. NICKELS, Traverse City State Hospital, Traverse City, Mich.

Strokes Caused by Diseases of the Heart and Aorta.

T. W. PARKIN, C. H. MILLIKAN, G. P. SAYRE, and J. E. EDWARDS, Mayo Clinic and Mayo Foundation, Rochester, Minn.

Chemical Control of Abdominal Behavior.

JOHN T. FERGUSON, BERTHA M. ORCUTT, and FRANCES BARE, Traverse City State Hospital, Traverse City, Mich.

The Role of Sedation in the Geriatric Patent—Use and Abuse of Sedatives.

MORRIS PLOTNICK, Cincinnati.

Use of Rauwolfia in Treatment of Malnutrition.

LEON G. DINKIN, Nutrition Clinic, Mount Sinai Hospital, New York.

A New Sustained Release Antibacterial Preparations in General Practice.

RHOSLYN J. BISHOFF and E. HAROLD MERCER, Dover, Del.

Section on Internal Medicine

The representative to the Scientific Exhibit from the Section on Internal Medicine is HENRY T. RICKETTS, Chicago.

Calcium Digitalis Tolerance Test.

JACK M. KAUFMAN and SEYMOUR GORDON, Harper Hospital, Detroit.

The Digital Circulation.

MILTON MENDLOWITZ, Mount Sinai Hospital, New York.

Constant Mass Displacement Ballistocardiograph.

JAN NYBOER and J. GORDON SHARP, Harper Hospital, Detroit.

The Postmyocardial Infarction Syndrome.

WILLIAM DRESSLER, Maimonides Hospital, State University of New York College of Medicine, Brooklyn, N.Y.

Value of Stress Tests in Detecting Coronary Disease.

GEORGE P. ROBB, HERBERT H. MARKS, Metropolitan Life Insurance Company, New York, and THOMAS W. MATTINGLY, Walter Reed Army Hospital, Washington, D. C.

An Evaluation of C-Reactive Protein and S-GO Transaminase in Coronary Artery Disease.

IRVING G. KROOP and NATHAN H. SHACKMAN, Jewish Chronic Disease Hospital, Jewish Hospital and State University of New York College of Medicine, Brooklyn, N.Y.

The Present Indications for Cardiac Surgery.

ROBERT P. GLOVER, JULIO C. DAVILA, ROBERT G. TROUT, Presbyterian, Fitzgerald Mercy, and Lankenau Hospitals, and St. Christopher's Hospital for Children, Philadelphia.

Cardiac Catheterization Spot Films: Physiologic Differentiation of Roentgenologically Similar Catheter Positions.

Doris J. W. Escher, Jerome H. Sharpiro, Harold G. Jacobson, Robert S. Aaron, and Herbert Mark, Montefiore Hospital, New York.

Study of Blood Pressure in the Apparently Healthy Aged: 65-106 Years.

Arthur M. Master, Richard P. Lasser and Harry L. Jaffe, Mount Sinai Hospital, New York.

Headaches of Vascular Origin.

F. W. Wittich, Minneapolis.

Radioactive Cobalt Labeled Vitamin B-12: Applications in Clinical and Experimental Medicine.

John William Frost and Manfred I. Goldwein, Hospital of the University of Pennsylvania Medical School, Philadelphia.

Clinical Studies in Angina Pectoris with Triethanolamine Trinitrate Biphosphate.

Harvey L. Fuller and Leon E. Kassel, Sinai Hospital, Baltimore.

Methods of Therapy in the Treatment of Essential Hypertension.

Garfield G. Duncan, Jerome Waldron, William K. Jenson, Robert J. Gill, Richard J. Eberly and Kenneth R. Knox, Pennsylvania Hospital, Philadelphia.

Management of Hypertensive Disease.

Joseph C. Edwards, Washington University Medical School, Barnes and St. Luke's Hospital, St. Louis.

Use of Ganglionic Blocking Agents in Hypertension.

John Moyer, Ralph Ford, Edward Dennis and Coleman Caplovitz, Baylor University College of Medicine, Houston, Texas.

Osteoporosis: A Common Metabolic Bone Disease.

Harry E. Banghart and Richard K. D. Watanabe, Germantown Hospital, Philadelphia.

Medical Management of Chronic Bronchopulmonary Infections.

Edward H. Morgan and H. Rowland Pearsall, the Mason Clinic, Seattle.

Regulation of Physical Activity in Management of Chronic Disease Energy Costs of Various Activities in Work and Play.

Edward E. Gordon, Micheal Reese Hospital, Chicago.

Some Facts and Fallacies About Renal Disease.

S. Edward King, New York.

Triiodothyronine: A New Thyroid Hormone.

Grosvenor W. Bissell, Veterans Administration Hospital and University of Buffalo School of Medicine, Buffalo.

Nutritional Cirrhosis.

Carroll M. Leevy, Thomas J. White, Angelo M. Gnassi, and Felix Traugott, Jersey City Medical Center, Seton Hall College of Medicine, Jersey City, N. J.

Diagnosis and Management of Patients with Arterial Hypertension: Evaluation of Five-Year Experience with Depressor Drugs.

Joseph H. Hafkenschiel Jr., Jerry E. Schmitthenner, and Earl A. Daugherty, Lankenau Hospital, Philadelphia.

Malignant Lymphoma: Hodgkin's Disease and Lymphosarcoma: Pathology, Treatment, and Potential Curability.

John F. Hynes, J. W. Abbiss, and Robert W. Frelick, Memorial Hospital, Wilmington, Del.

Paravertebral Injections of Prednisolone Acetate to the Cervical Vertebrae.

Abraham Cohen, William Lee Kanenson, Marvin J. Seven, and Joel Goldman, Jefferson Medical College and Philadelphia General Hospital Philadelphia.

The Audio-visual Analysis of Haemodynamics in Cardiac Diagnosis.

J. Scott Butterworth, Maurice R. Chassin, Robert McGrath, Edmund H. Reppert Jr., and John J. Thorpe, New York University Postgraduate Medical School, New York.

Oral Organomercurial Diuretics.

Sim P. Dimitroff and George C. Griffith, University of Southern California School of Medicine, Los Angeles.

Section on Laryngology, Otology, and Rhinology

The representative to the Scientific Exhibit from the Section on Laryngology, Otology and Rhinology is Walter E. Heck, San Francisco.

Tracheostomy.

John M. Lore Jr., St. Clare's Hospital, New York, and the Good Samaritan Hospital, Suffern, N. Y.

Hemilaryngectomy: A Technique for Cordal Carcinoma with Extension Posteriorly.

Max L. Som and Leon M. Arnold, Montefiore Hospital and Beth Israel Hospital, New York.

Maxillary Sinusitis.

Reginald Everett, St. Luke's Hospital, New York.

Vascular Headache: Anatomical Consideration and Modern Management.

Robert E. Ryan, St. Louis.

Cellular Pathology in Diseases of the Ear, Nose and Throat.

William T. K. Bryan and Marian P. Bryan, Washington University School of Medicine, St. Louis.

Your Ear and Noise.

Aram Glorig, D. E. Wheeler and H. P. House, Subcommittee on Noise in Industry, American Academy of Ophthalmology and Otolaryngology, Los Angeles.

The Histopathology of the Ear in Conductive Deafness.

Joseph G. Druss and Sidney S. Feuerstein, the Mount Sinai Hospital, New York.

Ossicular Histology and Histopathology: A Study of the Ligaments, Joints and Osseous Structure of the Ossicles.

Richard J. Bellucci and Dorothy Wolff, Manhattan Eye, Ear and Throat Hospital, New York.

The Education of Preschool Children with Impaired Hearing and Their Parents: The John Tracy Clinic Program.

Louise Tracy and Edgar L. Lowell, John Tracy Clinic, Los Angeles.

Otolaryngologic Plastic Surgery.

Samuel Fomon, Julius W. Bell, and Alfred Schattner, American Academy of Plastic Surgery for Head and Neck and Manhattan General Hospital, New York.

Modern Temporal Bone Surgery.

Julius Lempert, Lempert Institute of Otology, New York.

Section on Military Medicine

The representative to the Scientific Exhibit from the Section on Military Medicine is Frank M. Townsend, Washington, D. C.

Acute Respiratory Illness of Adenovirus (RI-APC) Etiology in Military Populations.

Maurice R. Hilleman, Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, D. C.

Disease-Free Laboratory Animals.

ROBERT M. NIMS, Walter Reed Army Institute of Research, Walter Reed Army Medical Center, Washington, D. C.

Eye Protection Against Minute High-Speed Missiles.

HEINRICH W. ROSE, School of Aviation Medicine, U. S. Air Force, Randolph Air Force Base, San Antonio, Texas.

Present Day Method of Moving Poliomyelitis Patients.

JULES RIVKIND and VIRGINIA HEALY, Military Air Transport Service, Brooks Air Force Base, Texas.

Analogous Pathologic Patterns in Man and Animal.

THOMAS C. JONES, Armed Forces Institute of Pathology, Washington, D. C.

Clinical Diagnostic Studies Utilizing Radioactive Isotopes.

E. R. KING, S. F. WILIAMS, RICHARD SPENCER, and THOMAS MITCHELL, U. S. Naval Hospital, National Naval Medical Center, Bethesda, Md.

Newer Approaches to Study of the Liver.

GEORGE L. CALVY, ROALD N. GRANT, MARVIN L. GLIEDMAN, and CARROLL M. LEEVY, U. S. Naval Hospital, St. Albans, N. Y.

United States Air Force Occupational Health Program.

GORDON F. FISHER and JOHN E. BAKER JR., Office of the Surgeon General, U. S. Air Force, Washington, D. C.

Mission of the U. S. Army Environmental Health Laboratory.

EDWARD J. DEHNE, ROBERT H. DUGUID and CHARLES E. CONER, U. S. Army Environmental Health Laboratory, U. S. Army Chemical Center, Edgewood, Md.

Pediatric Diagnostic Clinic.

THOMAS E. CONE JR., CHARLES L. WAITE, and HOWARD A. PEARSON, U. S. Naval Hospital, National Naval Medical Center, Bethesda, Md.

Dependents Medical Care Program for the Uniform Services.

PAUL I. ROBINSON, Office of the Surgeon General, Department of the Army, Washington, D. C.

Psychiatry in the U. S. Navy's Operation Deep Freeze.

GEORGE N. RAINES, Bureau of Medicine and Surgery, Washington, D. C., J. E. NARDINI and HERMAN B. MOLISH, U. S. Naval Hospital, Bethesda, Md.

Section on Nervous and Mental Diseases

The representative to the Scientific Exhibit from the Section on Nervous and Mental Diseases is BENJAMIN BOSHES, Chicago.

Diagnosis and Treatment of Intracranial Tumors in Childhood.

ROBERT S. KNIGHTON and FRANCISCO GOMEZ, Henry Ford Hospital, Detroit.

Practical Control of Emotional Disturbances: A Study in Treatment of Diversified Mental Symptoms.

STUART C. KNOX, College of Medical Evangelists, Los Angeles.

Muscle Pathology in Certain Neuromuscular Disorders.

G. M. SHY and F. H. MEILLER, National Institute of Neurological Diseases and Blindness, National Institute of Health, Bethesda, Md.

The Relationship of Hydrocephalus to Myelomeningocele and to Hydromyelia.

W. JAMES GARDNER and JORGE ANGEL, Cleveland Clinic, Cleveland.

Changing Aspects in the Treatment of Parkinson's Disease.

LEWIS J. DOSHAY, Columbia-Presbyterian Medical Center, New York.

Neurosurgical Alleviation of Parkinsonism and other Extrapyramidal Disorders.

IRVING S. COOPER, St. Barnabas Hospital, New York University–Bellevue Medical Center, New York.

Neural Mechanisms of Emesis and Antiemesis Site of Action of Emetic and Antiemetic Agents.

S. C. WANG, WILLIAM AMIOLS, and H. H. MERRITT, Columbia University, College of Physicians and Surgeons, New York.

Psychopharmacology: Principles and Mechanism Drug Action on Higher Nervous Functions, Voluntary and Autonomic.

W. HORSLEY GANTT and LESTER H. GLIEDMAN, Johns Hopkins University Medical School, Baltimore.

Putting Psychiatry Back into Medicine.

FRANK J. AYD JR., Franklin Square Hospital, Baltimore.

Laboratory and Clinical Evaluation of Perphenazine (Trilafon).

SAMUEL IRWIN, Schering Corporation, Bloomfield, N. J., and NORBETT BRUCKMAN, NADA RADINGER, and NATHAN S. KLINE, Rockland State Hospital Research Facility, Orangeburg, N. Y.

Chlorpromazine: The Road Back.

ELSE B. KRIS, Manhattan After Care Clinic, New York.

Effects of Chlorpromazine and Reserpine on Mental Hospital Budgets.

WERNER TUTEUR, ROCHUS STILLER and JAKOB GLOTZER, Elgin State Hospital, Elgin, Ill.

The Pharmacology of Ectylurea (Nostyn): a Neurosedative.

HOWARD G. GLASS, K. G. RINK, and ROBERT K. S. LIM, Miles-Ames Research Laboratory, Elkhart, Ind.

Animal Behavior as a Measure of Tranquilization.

FRED ALEXANDER, DAVID TEDESCHI, RALPH TEDESCHI, and ROBERT G. TUCKER, Smith, Kline & French Laboratories, Philadelphia.

Myasthenia Gravis: Report of 282 Cases.

KERMIT E. OSSERMAN, LAWRENCE I. KAPLAN, PETER KORNFELD, ELLIOT COHEN, HAROLD GOLDBERG, HARVEY MENDELOW, GABRIEL GHENKINS, and HENRY WINDSLEY, the Mount Sinai Hospital, New York.

Section on Obstetrics and Gynecology

The representative to the Scientific Exhibit from the Section on Obstetrics and Gynecology is FREDERICK H. FALLS, River Forest, Ill. The Section is cooperating in the demonstrations on perinatal problems.

Trichomonas Vaginalis Infection: Its Relation to Abnormal Cytology.

CARL HENRY DAVIS and COSTA G. GRAND, Cancer Institute, Miami, Fla.

Gynecography After Transtubal Pneumoperitoneum.

WALTER W. WILLIAMS and ROBERT A. GRUGAN, Springfield Hospital, Springfield, Mass.

Infertility: Diagnosis and Treatment.

ROBERT B. GREENBLATT, JOAN LANDRY, EDWIN C. JUNGCK, and WILLIAM E. BARFIELD, Medical College of Georgia, Augusta, Ga.

Radioisotope in Gynecology as Applied in Pelvic Malignancies.

JOHN C. ULLERY and JOHN H. HOLZAEPFEL, Ohio State University College of Medicine, Columbus, Ohio.

Fetal and Maternal Circulation of the Uteroplacental Organ: A Histologic Study.

CARL T. JAVERT, LEON MOTYLOFF, STANLEY BIRNBAUM, and WILLIAM DAVIS, Woman's Hospital Division of St. Luke's New York.

Cervical Support in Surgery for Prolapse.

JOSHUA WILLIAM DAVIES and ELISE RENNING, Woman's Hospital Division of St. Luke's, New York.

Colorectal Diseases in Pregnant Women.

J. GERENDASY, Jersey City, N. J.

Management of Vesicovaginal Fistula.

HENRY C. FALK, Beth Israel Hospital, New York.

Routine Cytology in Obstetrical and Gynecological Practice.

DONALD W. HALL, PAUL K. BIRTCH, CLYDE L. RANDALL, RICHARD W. BAETZ, DURU R. KARNA, and ROBERT J. PATTERSON, University of Buffalo School of Medicine, Buffalo.

Gynecologic Surgery: Illustrations, Discussion of Technique, Pitfalls and Complications.

WALTER J. REICH and MITCHELL J. NECHTOW, Chicago Medical School, Cook County Hospital and Cook County Graduate School of Medicine, Chicago.

Stress Incontinence in Female: Therapeutic Aids.

C. PAUL HODGKINSON, R. P. JOHNSON, W. T. KELLY, J. J. KROLL, and A. E. HOFF, Henry Ford Hospital, Detroit.

Pregnancies After Nephrectomy for Tuberculosis.

EDMUND LISSACK, Lissack Clinic, Concordia, Mo.

Suppression of Postpartum Breast Engorgement and Lactation with Long Acting Steroids.

JAY J. GOLD and MELVIN R. COHEN, Michael Reese Hospital, Chicago.

The Significance of Melituria in Pregnancy.

MILTON GROSS, ROBERT E. SEXTON, and ROBERT I. DORIAN, Margaret Hague Maternity Hospital, Jersey City, N. J.

The Modern Endocrine Approach to the Diagnosis and Management of the Infertile Patient.

HERBERT S. KUPPERMAN, JEANNE A. EPSTEIN, MEYER H. G. BLATT, DONALD K. BRIGGS, and ABRAHAM STONE, New York University–Bellevue Medical Center and the Margaret Sanger Research Bureau, New York.

Clinical Effects of New Progestational Compounds.

EDWARD T. TYLER and HENRY J. OLSON, University of California at Los Angeles School of Medicine, Los Angeles.

Section on Ophthalmology

The representative to the Scientific Exhibit from the Section on Ophthalmology is FRANK W. NEWELL, Chicago.

Therapy of Chronic Uveitis: Long Term Hormonal–Steroid Therapy.

DAN M. GORDON, New York Hospital, Cornell University Medical Center and the L. A. Margolyes League, New York.

Pathogenesis and Treatment of Glaucoma.

ADOLPH POSNER and GEORGE GORIN, Manhattan Eye, Ear and Throat Hospital, New York.

The Lymphatics of the Bulbar Conjunctiva.

H. SAUL SUGAR, Wayne State University College of Medicine and Sinai Hospital, Detroit.

Precancerous and Cancerous Melanosis of the Conjunctiva.

ALGERNON B. REESE and BRADLEY R. STRAATSMA, Institute of Ophthalmology of the Presbyterian Hospital and Columbia University College of Physicians and Surgeons, New York.

Serial Level Microphotography of the Eye.

GEORGE E. ARRINGTON JR. and DUPONT GUERRY III, Titmus Eye Laboratory, Medical College of Virginia, Richmond, Va.

Central Retinitis Associated with Amebiasis.

ALSON E. BRALEY and HENRY E. HAMILTON, State University of Iowa College of Medicine, Iowa City.

Electrophysiologic Insight in Ocular Motility.

GOODWIN M. BREININ, New York University Postgraduate Medical School, New York.

Stereoscopic Kodachrome Photographs of the Fundus Oculi.

ARTHUR J. BEDELL, Albany, N. Y.

Differential Diagnosis and Management of the Red Eye.

WILLIAM H. HAVENER, Ohio State University College of Medicine, Columbus, Ohio.

Conoid Ophthalmic Lenses: An Original Development in Subnormal Vision Aids.

DAVID VOLK, Western Reserve University School of Medicine, Cleveland.

External Diseases of the Eye: Diagnosis and Treatment.

EVERET H. WOOD, Jackson Clinic and University of Wisconsin Medical School, Madison, Wis.

Lacrimal Protein Patterns: Protein Analysis of Tears by Paper Electrophoresis.

OLIVE F. ERICKSON, Stanford University School of Medicine, San Francisco.

Section on Orthopedic Surgery

The representative to the Scientific Exhibit from the Section on Orthopedic Surgery is JAMES I. KENDRICK, Cleveland.

Fixed Postural Correction for Low Back Pain and Varied Neuralgias.

LAURENCE JONES, Beverly Hills, Calif.

Osteotomy: Bunionectomy for Hallux Valgus.

C. LESLIE MITCHELL, JOSEPH L. FLEMING, RICHARD ALLEN, and CHRISTOPHER GLENNEY, Henry Ford Hospital, Detroit.

Prevention of Automobile Injuries.

MURRAY E. GIBBENS, WARD B. STUDT, WILLIAM H. MOTT, and HORACE E. CAMPBELL, Veterans Administration Hospital, Denver.

Pollicization of the Index Finger.

R. A. MURRAY, Scott and White Clinic, Temple, Texas.

Juxta: Articular Ossification of the Ligaments of the Vertebral Column.

CHARLES J. SUTRO, Hospital for Joint Diseases, New York, and DAVID E. EHRLICH and MORRIS WITTEN, Veterans Administration Regional Office, Brooklyn, N. Y.

Orthopedic Criteria for Shoe Prescription.

C. F. MUELLER, HERMAN GLADSTONE, and FRANK SCHENCK, Veterans Administration Central Office, Washington, D. C.

The Effect of Antituberculous Drugs on the Healing of Fractures.

ALBERT R. ALLEN and A. W. STEVENSON, Central Washington Tuberculosis Hospital, Selah, Wash.

The Technique of Hemipelvectomy.

BRADLEY L. COLEY, NORMAN L. HIGINBOTHAM, and LEWIS HOGG JR., Memorial Center for Cancer and Allied Diseases, New York.

Metals in Surgery.

ALBERT B. FERGUSON JR. and PATRICK G. LAING, University of Pittsburgh School of Medicine, Pittsburgh.

Cultured Calf Bone Grafts.

E. J. TUCKER, Houston, Texas, and WILLIAM B. FISCHER, Northwestern University Medical School, Chicago.

Fractures in the Aged.

EDGAR M. BICK, ALEXANDER GARCIA, and THOMAS J. DRING, New York and Brooklyn Regional Committee on Trauma American College of Surgeons, New York.

Anatomic and Radiographic Studies of Degenerative Diseases of the Cervical Spine.

Z. B. FRIEDENBERG, JACK EDEIKEN, N. SPENCER, and S. TOLENTINO, Hospital of the University of Pennsylvania, Philadelphia.

Degenerative Lesions of the Acromioclavicular Joints and Sternoclavicular Joints.

ANTHONY F. DEPALMA, and WILLIAM DAVISON, Jefferson Medical College, Philadelphia.

Treatment of Giant Cell Tumors.

J. I. KENDRICK and GEORGE S. PHALEN, Cleveland Clinic, Cleveland.

Moderately Severe Whiplash Injuries of the Cervical Vertebrae and Their Radiologic Diagnosis.

MARTIN S. ABEL and RICHARD F. WAGNER, San Francisco.

Section on Pathology and Physiology

The Section on Pathology and Physiology is cooperating in the Special Exhibit on Fresh Tissue Pathology. The representative to the Scientific Exhibit is SAMUEL A. LEVINSON, Chicago.

The Value of Needle Biopsy of the Liver in Pediatrics.

DANIEL STOWENS and RAYMOND W. CHUN, Armed Forces Institute of Pathology, Washington, D. C.

Ultramicro Methods for Clinical Laboratories.

EDWIN M. KNIGHTS JR., RODERICK P. MACDONALD, and JAAN PLOOMPUU, Harper Hospital, Detroit.

Cytology in Diagnosis and Research.

EMMERICH VON HAAM, GUENTHER CEELEN, CLARENCE GANTT, ALEXANDER HORAVA, EDWARD MILLER, N. S. M. MURTHY, and DANTE SCARPELLI, Ohio State University College of Medicine, Columbus, Ohio.

Traumatogenic Versus Natural Causes in Medicolegal Fatalities.

ALFRED L. SHAPIRO, Brooklyn, N. Y.

Chronic Thyroiditis by Autoimmunization.

ERNEST WITEBSKY, JOHN R. PAINE, KORNEL TERPLAN, NOEL R. ROSE, and RICHARD W. EGAN, University of Buffalo School of Medicine and the Buffalo General Hospital, Buffalo.

Hereditary Muscular Dystrophy in the Mouse: A Comparison with the Human Disease.

E. D. MURPHY, E. S. RUSSELL, A. A. KANDUTSCH, W. SILVERS, and L. C. STEVENS, Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine.

Brucellosis and the Heart: A New Concept of the Etiology of Valvular Heart Disease.

THOMAS M. PEERY and ROGER H. SHANNON, George Washington University School of Medicine, Washington, D. C.

Mechanism of Action of Reserpine and Chlorpromazine: An Hypothesis.

DONALD F. BOGDANSKI, PARKHURST A. SHORE, and BERNARD B. BRODIE, National Heart Institute, National Institutes of Health, Bethesda, Md.

Certification of Medical Technologists.

LALL G. MONTGOMERY and RUTH DRUMMOND, Registry of Medical Technologists of the American Society of Clinical Pathologists, Muncie, Ind.

Aspiration Biopsy: Technique and Application.

JOHN T. GODWIN, St. Joseph's Infirmary, Atlanta, Ga.

Esophagus, Stomach and Duodenum: Analysis of 250 Surgical Cases.

W. C. DREESE, J. W. WELCH, V. E. CHESKY, R. G. RATE, and C. A. HELLWIG, Hertzler Clinic and Hertzler Research Foundation, Halstead, Kan.

Glucagon and the Antiinsulin Action of Cortisone.

SYDNEY S. LAZARUS and BRUNO W. VOLK, Isaac Albert Research Institute of the Jewish Chronic Disease Hospital, Brooklyn, N. Y.

Myocarditis: A Frequent Complication in Systemic Disease.

WILLIAM C. MANION, Armed Forces Institute of Pathology, Washington, D. C.

Pathology of Radiation Injury.

CARL F. TESSMER and F. L. JENNINGS, Armed Forces Institute of Pathology, Washington, D. C.

Natural History of Atherosclerosis.

R. L. HOLMAN, H. C. MCGILL JR., J. P. STRONG, O. R. GRIFFIN, and J. C. GEER, Louisiana State University School of Medicine, New Orleans.

The Relation of Endemic Goiter to Endemic Deaf-Mutism.

ISIDOR GREENWALD, New York University College of Medicine, New York.

Genetic Determination of Serum Cholesterol Level: A Study of 201 Families.

LOUIS E. SCHAEFER, DAVID ADLERSBERG, and ARTHUR G. STEINBERG, Mount Sinai Hospital and Central Manhattan Medical Group, New York.

Section on Pediatrics

The representative to the Scientific Exhibit from the Section on Pediatrics is F. THOMAS MITCHELL, Memphis, Tenn. The Section is cooperating in the demonstrations on perinatal problems.

The Role of the Physician in Child Safety.

GEORGE W. STARBUCK, Greater New Bedford Children's Accident Prevention Program, New Bedford Medical Society, and St. Luke's Hospital, New Bedford, Mass.

Poisoning from Petroleum Distillates: The Hazards of Kerosene and Furniture Polish.

A. BRADLEY SOULE JR. and JOSEPH C. FOLEY, University of Vermont College of Medicine, Burlington, Vt.

Florida Poisoning Control Centers: An Integrated Statewide Program.

ROBERT GRAYSON, Florida Pediatric Society and Florida Chapter, American Academy of Pediatrics, Miami Beach, Fla.

Indications for Excretory Urography in Children from Birth to 14 Years of Age: Review of 797 Pyelograms Performed on 656 Children.

JOHN A. ASKIN, THOMAS REICHELDERFER, JULES MERITT, and JULIAN SALIK, Harriet Lane Home, Johns Hopkins Hospital, and Sinai Hospital of Baltimore.

The Principles of Pediatric Rehabilitation.

A. KANOF, J. ROGOFF, and H. FISCHLER, Jewish Chronic Disease Hospital, and the State University of New York College of Medicine at New York, Brooklyn, N. Y.

Thoracic Tumors of Childhood.

HAROLD W. DARGEON and CHARLOTTE TAN, Children's Tumor Registry and Pediatric Service of Memorial Center, New York.

Clinical and Genetic Aspects and Research in Muscular Dystrophy.

JOHN T. ELLIS and ADE MILHORAT, Muscular Dystrophy Associations of America, Inc., New York.

Clinical-Pathologic Correlation in Infants and Children with Damage to the Central Nervous System.

JOHN BARTRAM and JAMES B. AREY, St. Christopher's Hospital for Children and Temple University School of Medicine, Philadelphia.

The Jaundiced Neonate: Differential Diagnosis and Management.

VICTOR C. VAUGHAN III and FROUZANDEH B. BRELIAN, Temple University School of Medicine, Philadelphia.

How to Give Painless Injections.

VIRGINIA D. WEEKS and JANET TRAVELL, the New York Hospital–Cornell Medical College, New York.

Intestinal Obstruction in Infants: Causes and Treatment.

JAMES D. HARDY and T. K. WILLIAMS, University of Mississippi Medical Center, Jackson, Miss.

Symptomatic Redundant Sigmoid: A Newer Concept in Therapy.

DONALD A. DAVIS, PAUL H. ROBERTS and ADOLPH G. DESANCTIS, New York University Postgraduate Medical School and University Hospital, New York.

Meckel's Diverticulum.

W. B. KIESEWETTER and F. A. MCPARLAND, Children's Hospital of Pittsburgh, Pittsburgh.

Pseudohypoparathyroidism.

DAVID H. BAKER, NATHANIEL FINBY, and JOSEPH CUSMANO, New York Hospital–Cornell Medical Center, New York.

Prevention of Accidents in Children.

THOMAS S. BUMBALO, LOIS J. PLUMMER, and J. ROGER WARNER, Edward J. Meyer Memorial Hospital and University of Buffalo School of Medicine, Buffalo.

EEG Studies and the Use of Tranquillizer Drugs in the Care of Children with Reading, Speech and other School Adjustment Problems.

HOMER F. WEIR and ROBERT L. ANDERSON, Rockford Memorial Hospital, Rockford, Ill.

Adhesions of Labia Minora: Treatment with Topical Estrogenic Ointment.

B. H. WILLIAMS and C. J. CRAMM JR., Scott and White Clinic, Temple, Texas.

Gliomas of the Optic Nerves.

H. W. DODGE JR., J. GRAFTON LOVE, W. MCK. CRAIG, M. B. DOCKERTY, T. P. KEARNS, C. B. HOLMAN, and A. B. HAYLES, Mayo Clinic and Mayo Foundation, Rochester, Minn.

Protein and Amino Acid Needs of Underweight Infants.

ANTHONY A. ALBANESE, REGINALD A. HIGGONS, GERTRUDE M. HYDE, and LOUISE ORTO, Nutritional Research Laboratory, St. Luke's Hospital, New York and St. Luke's Convalescent Hospital, Greenwich, Conn.

Section on Physical Medicine

The representative to the Scientific Exhibit from the Section on Physical Medicine is DONALD A. COVALT, New York, N. Y.

Rehabilitation in a Large Medically Directed Voluntary Nursing Home.

H. J. BEHREND and B. BRODOFF, Beth Abraham Home, New York.

Rehabilitation Aspects of Myopathies and Neuromyopathies.

GEORGE G. DEAVER, Institute of Physical Medicine and Rehabilitation, New York University–Bellevue Medical Center, New York.

Management of the Brain Damaged Patient.

JEROME S. TOBIS, MILTON LOWENTHAL, and SIMON MARINGER, New York Medical College, New York.

Getting the Severely Handicapped Back to Work.

MIECZYSLAW PESZCZYNSKI, Highland View Hospital, Cleveland.

Electrovasography: Quantitative Diagnosis in Vascular Disorders.

LEWIS COHEN, Alexander Blain and Sinai Hospitals, Detroit.

The Use of Adaptive Equipment to Achieve Vocational Goals.

MILAND E. KNAPP, PAUL M. ELLWOOD JR., DOUGLAS FENDERSON, and GEORGE JEYS, Elizabeth Kenny Institute, Minneapolis.

Brief Maximal Exercise: Effectiveness on the Strength of the Quadriceps Femoris.

DONALD L. ROSE, University of Kansas Medical Center, Kansas City, Kan.; STANLEY F. RADZYMINSKI, Veterans Administration Center, Wadsworth, Kan.; and RALPH R. BEATTY, Veterans Administration Hospital, Kansas City, Mo.

Integration of Speech Therapy in Expressive Aphasia.

HENRY V. MORELEWICZ, ANTHONY IANNONE, and CHARLES EUSTACE, University of Buffalo Chronic Disease Research Institute, Buffalo.

Rehabilitation of the Poliomyelitis Patient with Respiratory Paralysis.

LEON LEWIS, GERALD G. HIRSCHBERG, and J. P. ADAMSON, Poliomyelitis Respiratory and Rehabilitation Center, Fairmont Hospital, San Leandro, Calif.

Industrial Amputee Rehabilitation.

W. SCOTT ALLAN, Liberty Mutual Insurance Company, Boston.

Rx-Independence.

SAMUEL S. SVERDLIK, St. Vincent's Hospital, New York.

Occupational Therapy.

DEAN W. ROBERTS, JAYNE SHOVER, ELIZABETH WAGNER, and FLORENCE STATTEL, National Society for Crippled Children and Adults, Inc., Chicago.

Rehabilitation in the Home.

EUGENE MOSKOWITZ, New York University–Bellevue Medical Center, New York.

Total Management of Muscle Dysfunction.

HARRIET E. GILLETTE, Physical Medicine and Rehabilitation Clinic, Atlanta, Ga.

Orthethics for Function.

ROBERT L. BENNETT, Georgia Warm Springs Foundation, Warm Springs, Ga.

Section on Preventive Medicine

The representative to the Scientific Exhibit from the Section on Preventive Medicine is PAUL A. DAVIS, Akron, Ohio.

Current Concepts on the Etiology and Management of Atherosclerosis.

J. J. VAN GASSE and R. F. MILLER, Jackson, Mich.

Pneumoconiosis in the Diatomite Industry.

W. CLARK COOPER and LEWIS J. CRALLEY, Occupational Health Program, U. S. Public Health Service, Cincinnati.

Polio's Fellow Travelers.

THOMAS M. RIVERS, National Foundation for Infantile Paralysis, New York.

The Epidemic Intelligence Service.

WILLIAM A. NEILL, DONALD A. HENDERSON, and ALEXANDER D. LANGMUIR, Communicable Disease Center, U. S. Public Health Service, Atlanta, Ga.

Northward March of Yellow Fever.

H. VAN ZILE HYDE, Public Health Service, Department of Health, Education and Welfare, and International Cooperation Administration, Washington, D. C.

County Health Movement in Pennsylvania.

PASCAL F. LUCCHESI and ROBERT L. RICHARDS, Educational and Scientific Trust, Medical Society of the State of Pennsylvania, Harrisburg, Pa.

Accidental Poisonings.

HAROLD JACOBZINER and HARRY W. RAYBIN, Poison Control Center, New York City Department of Health, New York.

The Epidemiologist Looks at Cancer: An Approach to Cancer Prevention.

EMERSON DAY, ERNEST L. WYNDER, WALTER E. O'DONNELL, IRWIN D. J. BROSS, and CONSTANCE CORNISH, Kettering Institute for Cancer Research of Memorial Center, New York.

Cardiac Effects of Athletic Work Stress.

J. W. WILCE, Ohio State University, Columbus, Ohio.

The Blood Bank: A Service to the Physician.

WILLIAM P. MURPHY JR., American Association of Blood Banks, Miami, Fla.

Section on Radiology

The representative to the Scientific Exhibit from the Section on Radiology is RICHARD H. CHAMBERLAIN, Philadelphia.

The Art of Mold Technology in Radiation Treatment of Cancer.
BERNARD ROSWIT, SOL M. UNGER, STANLEY J. MALSKY, CYPRIAN B. REID, and LOUIS MADDALONE, Veterans Administration Hospital, Bronx, N. Y.

The Vaterian Segment: An Anatomic Roentgen Study.
MAXWELL H. POPPEL, HAROLD G. JACOBSON, and JEROME H. SHAPIRO, New York University College of Medicine, Montefiore and Bellevue Hospitals, New York.

Motor Phenomena in the Distal Esophagus: Diagnosis of Minimal Hiatal Herniation.
BERNARD S. WOLF, RICHARD H. MARSHAK, MAX L. SOM, and SIGMUND A. BRAHAMS, the Mount Sinai Hospital, New York.

Cerebral Angiography in Head Trauma: Report of 215 Cases.
J. L. LEGER, C. BERTRAND and M. DUFRESNE, Notre Dame Hospital, Montreal, Canada.

Patent Ductus Arteriosus: A Teaching Exhibit.
LOUIS H. FRISCHE, CHARLES T. DOTTER, HERBERT E. GRISWOLD, and MASAO TAMAKI, University of Oregon Medical School, Portland, Ore.

Lobar Emphysema in the Young.
EUGENE F. VAN EPPS and HARRY W. FISCHER, State University of Iowa College of Medicine, Iowa City.

Pulmonary Alveolar Microlithiasis (Pulmonary Calcinosis).
MERRILL C. SOSMAN, Boston, GERALD D. DODD, Houston, Texas; W. DUANE JONES, Ashland, Ky.; and GEORGE U. PILLMORE, Easton, Pa.

Mediastinal Emphysema in Pediatric Roentgenology.
RICHARD F. MCCLURE, Children's Hospital, Los Angeles.

How Does Cancer Grow?—Pulmonary Metastases.
V. P. COLLINS, P. GIBBS, and I. DAVID, Baylor University College of Medicine and Jefferson Davis Hospital, Houston, Texas.

Coronary Arteriography: A New Technique
CHARLES T. DOTTER and LOUIS H. FRISCHE, University of Oregon Medical School, Portland, Ore.

Studies of Esophageal Varices Before and After Portocaval Shunts.
JOHN A. EVANS and MARY ANN PAYNE, the New York Hospital–Cornell Medical Center, New York.

Section on Surgery, General and Abdominal

The representative to the Scientific Exhibit from the Section on Surgery, General and Abdominal is JOHN H. MULHOLLAND, New York.

Strictures of the Bile Duct.
RICHARD B. CATTELL, KENNETH W. WARREN, and BENTLEY P. COLCOCK, Lahey Clinic, Boston.

Development of Proteolytic Enzyme for Surgical Debridement.
JAMES F. CONNELL JR., LOUIS DEL GUERCIO, and LOUIS M. ROUSSELOT, St. Vincents Hospital, New York; JOHN HENDERSON, EUGENE GUAGHAN; and JOYCELYN DOUGLAS, Johnson & Johnson Research Foundation, New Brunswick, N. J.; and IRWIN SIZER, Massachusetts Institute of Technology, Cambridge, Mass.

New and Improved Tidal Drainage Apparatus for the Urinary Bladder.
MURRAY W. SEITCHIK, JOHN L. SBARBARO, WILLIAM L. MARTIN, and ALEX W. ULIN, Hahnemann Medical College and Hospital, Philadelphia.

Newer Methods in the Diagnosis of Hyperparathyroidism.
BROCK E. BRUSH and MELVIN A. BLOCK, Henry Ford Hospital, Detroit.

Production of Cirrhosis of the Liver in the Experimental Animal.
JOHN L. MADDEN, JOHN M. LORE JR., and WILLIAM J. MCCANN, St. Clare's Hospital, New York.

Newer Concepts of Wound Healing.
J. ENGLEBERT DUNPHY, LOUIS N. PERNOKAS, and LEON C. EDWARDS, Harvard Medical School and Boston City Hospital, Boston.

Carcinoma of the Esophagus and Cardia.
HERBERT D. ADAMS, DAVID P. BOYD, and MAGNUS I. SMEDAL, Lahey Clinic, Boston.

Acute Cholecystitis.
STANLEY O. HOERR, W. V. MARTINEZ, and A. A. ZAVALETA, Cleveland Clinic Foundation, Cleveland.

Anatomical and Embryological Approach to the Surgical Treatment of Gastric Cancer.
JOSEPH A. VISALLI, HAROLD A. HARPER and H. J. MCCORKLE, University of California School of Medicine, San Francisco.

Study of Timing of Tissue Transfer in Reconstructive Procedures.
F. S. HOFFMEISTER, Roswell Park Memorial Institute, New York State Department of Health, Buffalo.

The Relationship of Exophthalmos to Disorders of the Thyroid.
WILLARD BARTLETT, St. Louis University School of Medicine, St. Louis.

Reconstruction of the Upper Gastrointestinal Tract with Segments of the Colon.
WILLIAM E. NEVILLE and GEORGE H. A. CLOWES JR., Western Reserve University College of Medicine at City Hospital, Cleveland.

The Management of Bowel Evacuation in Surgical Patients.
ROBERT TURELL, New York.

Intestinal Obstruction: Tape Recordings of Peristaltic Sounds and Other Advances in the Diagnosis and Treatment.
JOHN W. DEVINE and JOHN W. DEVINE JR., Lynchburg General Hospital, Lynchburg, Va.

Heart Surgery.
DWIGHT E. HARKEN, HARRISON BLACK, WARREN J. TAYLOR, WENDELL B. THROWER, and FREDERICK G. PANICO, Peter Bent Brigham Hospital, Boston.

Results of Major Arterial Grafting.
A. W. HUMPHRIES, V. G. DEWOLFE, and F. A. LEFEVRE, Cleveland Clinic, Cleveland.

Induced Cardiac Arrest (Cardioplegia) in Open Heart Operations.
CONRAD R. LAM, THOMAS GEOGHEGAN, CHARLES SERGEANT, and EDWARD GREEN, Henry Ford Hospital, Detroit.

Arterial Grafts: Factors Involved in Success or Failure.
NORMAN ROSENBERG, JOHN HENDERSON, E. R. L. GAUGHRAN, GEOFFREY H. LORD, and JOCELYN FIELDING DOUGLAS, Middlesex General Hospital, St. Peters General Hospital and Johnson & Johnson Research Foundation, New Brunswick, N. J.

Portacaval Shunts for Portal Hypertension 1943-1957.
ARTHUR H. BLAKEMORE, ARTHUR B. VOORHEES JR., HAROLD G. BARKER, KEITH REEMTSMA, and NATHAN LANE, Columbia-Presbyterian Medical Center, New York.

A New Method for Evaluating Portal Hypertension.
FRANCIS C. JACKSON, EDWARD E. LONGABAUGH, JOHN L. HAPPEL, and JOSEPH J. KLINE, Veterans Administration Hospital, and University of Pittsburgh School of Medicine, Pittsburgh.

Clinical Appraisal of Direct Vision Intracardiac Surgery.
EARLE B. KAY, H. A. ZIMMERMAN, THOMAS MACKRELL, JOHN MACKRELL, DAVID MENDELSOHN, and FREDERICK S. CROSS, St. Vincent Charity Hospital, Cleveland.

Problems in Vascular Surgery.

HARWELL WILSON, EDWARD H. STORER and E. EUGENE BRAMLITT, University of Tennessee College of Medicine, Memphis, Tenn.

The Direct (Open) Surgical Repair of Congenital and Acquired Intracardiac Malformations.

C. W. LILLEHEI, H. E. WARDEN, R. A. DEWALL, V. L. GOTT, R. D. SELLERS, M. COHEN, R. C. READ, and R. L. VARCO, University of Minnesota Medical School, Minneapolis.

Section on Urology

The representative to the Scientific Exhibit from the Section on Urology is MILTON M. COPLAN, Miami, Fla. There will be a general discussion of the urology exhibits at 2:30 p. m. Tuesday, Wednesday, and Thursday, in the exhibit area of the Section on Urology.

Bladder Flat Ureteroplasty.

MICHAEL K. O'HEERON, JAMES R. FISH, MARVIN G. RAPE, and NEWTON F. MCDONALD, Houston, Texas.

Pediatric Urology.

SAM G. JAMESON, JAMES O. COOPER, and J. SCHULER MCKINNEY, El Dorado, Ark.

Experiences with Six Opaque Media in Intravenous Urography: Five Thousand Case Studies.

HARRY R. TRATTNER, ALBERT R. FLORES, G. S. KRISHNAMURTI, and FUAD BOULOS, Cleveland City Hospital, Cleveland.

Treatment of Adenocarcinoma of the Prostate.

D. A. CULP, R. H. FLOCKS, and J. R. PORTO, State University of Iowa Hospitals, Iowa City.

New Concepts of the Structure of the Nephron.

HANS ELIAS, the Chicago Medical School, Chicago.

Hypogonadism in the Male.

ARTHUR A. ROTH, Western Reserve University, Cleveland City Hospital, and Mount Sinai Hospital, Cleveland.

Renal Angiography: Indications and Experience with a Safe Technique.

E. F. POUTASSE, W. J. ENGEL, and H. J. KLAPPROTH, Cleveland Clinic, Cleveland.

Bladder Neck Obstruction in Infants.

JOSEPH W. HOOPER JR. and R. BRYANT HABE JR., Babies Hospital, Wilmington, N. C.

Regeneration of the Urinary Bladder.

A. WAITE BOHNE, Henry Ford Hospital, Detroit.

A New Automatic Irrigator.

HU C. MYERS and RALPH MCDANIELS, Myers Clinic and Broaddus Hospital, Philippi, W. Va.

Sex Chromatin in Sexual Anomalies.

JOSEPH H. KIEFER, IRA ROSENTHAL, ELIZABETH MCGREW, and I. PAT BRONSTEIN, University of Illinois College of Medicine, Chicago.

The Urogenital Sinus in Hermaphroditism.

ALBERT J. PAQUIN, NATHANIEL FINBY, DAVID BAKER, and JOHN EVANS, the New York Hospital–Cornell Medical Center, New York.

Mucoids in the Urinary Tract: A Histochemical Study in Normal and Diseased States in Man.

WILLIAM H. BOYCE and NORMAN M. SULKIN, the Bowman Gray School of Medicine, Wake Forest College, Winston-Salem, N. C.

Retropubic Y-Plasty for Vesical Neck Obstruction.

THOMAS J. SINATRA, State University of New York, Downstate Medical Center, Brooklyn, N. Y.

Treatment of Urinary Tract Infections with Antibiotics and a Sulfonamide.

C. D. CREEVY, University of Minnesota Medical School, Minneapolis.

Uroflometric Observations of Women.

WALTER P. PETER JR. and WILLARD M. DRAKE JR., the Cooper Hospital, Camden, N. J.

Urinary Catecholamines: A Dependable Test for Pheochromocytoma.

MARCEL GOLDENBERG, JOHN K. LATTIMER, MEYER MELICOW, and GEORGE CAHILL, Columbia University College of Physicians and Surgeons, New York.

The Electrourogram.

ALFRED W. KNEUCKER, the Chicago Medical School, Chicago.

Section on Miscellaneous Topics

Gynecological Teaching Models Made with a Self Curing Acrylic.

W. C. KEETTEL, J. H. RANDALL, and PAUL V. VER VAIS, State University of Iowa College of Medicine, Iowa City.

The Functions of Medical Illustration for Psychiatry.

DONALD W. HAMMERSLEY and WILLIAM H. CAMPBELL, Veterans Administration Hospital, Topeka, Kan.

Undergraduate Teaching in Ophthalmology.

RICHARD C. TROUTMAN and STANLEY MASTERS, State University of New York, Down State Medical Center, Brooklyn, N. Y.

Physicians and Schools: Health Appraisal of School Children.

DONALD A. DUKELOW, FRED V. HEIN, and WALLACE WESLEY, Bureau of Health Education, American Medical Association, Chicago.

Headache: Practical Aspects.

HENRY D. OGDEN, Louisiana State University School of Medicine, New Orleans.

Pollen Identification Simplified.

OREN C. DURHAM, WILLIAM J. REMO, and DANIEL LYNCH, Abbott Laboratories, North Chicago, Ill.

Gastrointestinal Allergy to Foods in Children.

JOSEPH H. FRIES, New Hyde Park, N. Y.

The Professional Activity Study.

VERGIL N. SLEE and ROBERT G. HOFFMANN, Commission on Professional and Hospital Activities, Inc., Ann Arbor, Mich.

National Board Examinations.

JOHN P. HUBBARD, National Board of Medical Examiners, Philadelphia.

Medical Education.

EDWARD L. TURNER and CATHERINE HAYES, Council on Medical Education and Hospitals, American Medical Association, Chicago.

The Importance of the Prescription.

ROBERT P. FISCHELIS, American Pharmaceutical Association, Washington, D. C.

University of Florida Health Center: An Integrated University Approach.

GEORGE T. HARRELL, University of Florida College of Medicine, Gainesville, Fla.

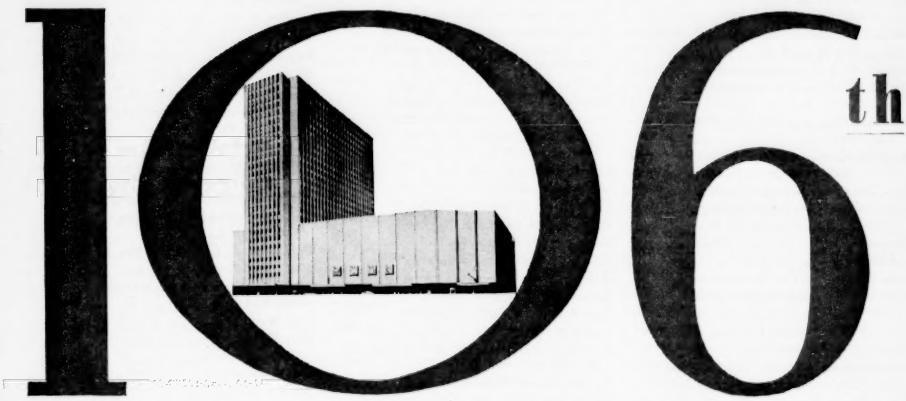
Driver Behavior: Schenectady Study.

HERMAN E. HILLEBOE, New York State Department of Health, Albany, N. Y.

Educational Activities.

GEORGE W. STEPHENSON, American College of Surgeons, Chicago.

the TECHNICAL EXPOSITION



A. M. A. ANNUAL MEETING

June 3-7, 1957 New York Coliseum

Columbus Circle, site of the Coliseum, is the exact center—the heart—of New York City. This June it will also be the heart of American medicine and exact center of interest for all of the medical world.

All vital factors will converge at the A. M. A. Annual Meeting. Along with the stimulus of scientific study and the pulse of practice, physicians will find the "life blood" means of implementing everyday routine in the Technical Exposition. Industry's contribution to medicine will be summarized in its display of products and services representative of the very finest available.

Among the hundreds of technical exhibits, the various components for treatment, study, office efficiency, and patient education will be presented in their most diversified and advanced forms. The men qualified to present them—leaders in the fields of pharmaceutical and nutritional research, equipment and instrument engineering, medical publishing, and specialized services—are planning carefully to serve the doctor in every way they can.

Visitors will welcome the comforts of air conditioning, the cafeteria and conveniently located food service bars, and excellent transportation and parking facilities. Escalators off the center lobby will make it almost effortless to get around to all floors. The visiting physicians will certainly find it easier to make the rounds of everything an Annual Meeting has to offer.

With all the conveniences of the Coliseum, you will have more time than ever to spend profitably. We hope every physician will add some of this extra time to his tours of the Technical Exposition. Representatives of the firms listed on the following pages are looking forward to your visits—anytime between 8:30 and 5:30, Monday through Thursday, and until noon Friday, June 7.

THOS. R. GARDINER
Business Manager and Director of Technical Exhibits

TECHNICAL EXHIBITORS

Abbott Laboratories, North Chicago, Ill.
Adolph's, Ltd., Los Angeles
Air-Shields, Inc., Hatboro, Pa.
Alcon Laboratories, Inc., Fort Worth, Texas
Allergy-Free Products, Brooklyn, N. Y.
Allison, W. D., Co., Indianapolis, Ind.
American Academy of General Practice, Kansas City, Mo.
American Cyanamid Co. (Fine Chemicals Div.), New York
American Cyanamid Co. (Surgical Products Div.), Danbury, Conn.
American Cystoscope Makers, Inc., New York
American Hospital Supply Corp. (Scientific Products Div.), Evanston, Ill.
American Medical Association Publications, Chicago
American Optical Co., Southbridge, Mass.
American Physicians Art Association, Whittier, Calif.
American Sterilizer Co., Erie, Pa.
Ames Co., Inc., Elkhart, Ind.
Appleton-Century-Crofts, Inc., New York
Armour Laboratories, Kankakee, Ill.
Arnar-Stone Laboratories, Inc., Mount Prospect, Ill.
Associated Mills, Chicago
Association of American University Presses, New Haven, Conn.
Audio-Digest Foundation, Glendale, Calif.
Aveeno Corp., New York
Ayerst Laboratories, New York
Babee-Tenda Corp., Cleveland
Bauer & Black, Chicago
Baum, W. A., Co., Inc., Long Island, N. Y.
Bausch & Lomb Optical Co., Rochester, N. Y.
Baxter Laboratories, Inc., Morton Grove, Ill.
Beck-Lee Corp., Chicago
Becton, Dickinson & Co., Rutherford, N. J.
Beeber, J., Co., Inc., New York
Bell & Howell Co., Chicago
Berman Laboratories, Ozone Park, N. Y.
Best Foods, Inc., The, New York
Bib Corp., The, Lakeland, Fla.
Bilhuber-Knoll Corp., Orange, N. J.
Blair Laboratories, Inc., Short Hills, N. J.
Blakiston Division—McGraw-Hill Book Co., Inc., New York
Borcherdt Co., Chicago
Borden Co., The, New York
Breck, John H., Inc., Springfield, Mass.
Brewer & Co., Inc., Worcester, Mass.
Bristol Laboratories, Inc., New York
Bristol-Myers Products Div., New York
Burdick Corp., The, Milton, Wis.
Burns Cuboid Co., Santa Ana, Calif.
Burroughs Wellcome & Co. (U. S. A.) Inc., Tuckahoe, N. Y.
Calgon, Inc., Pittsburgh
Cambridge Instrument Co., Inc., New York
Cameron Surgical Specialty Co., Chicago
Camp, S. H., & Co., Jackson, Mich.
Canada Dry Ginger Ale., Inc., New York
Carnation Co., Los Angeles
Castle, Wilmot, Co., Rochester, N. Y.
Charma Brassiere Co., Inc., New York
Chattanooga Pharmacal Co., Inc., Chattanooga, Tenn.
Chicago Pharmacal Co., Chicago
Chicago Reference Book Co., Chicago
Chilean Iodine Educational Bureau, Inc., New York
Christian Medical Society, Chicago
Chrysler Corp., Chrysler Div., Detroit
Church & Dwight Co., Inc., New York
Ciba Pharmaceutical Products, Inc., Summit, N. J.
Clark-O'Neill, Inc., New York
Clersite Co., Chicago
Coca-Cola Co., The, Atlanta, Ga.
P. F. Collier & Son Corp., New York
Collins, Warren E., Inc., Boston
Colwell Publishing Co., Champaign, Ill.
Compass Travel Bureau, Inc., New York
Coreco Research Corp., New York
Corn Products Sales Co., New York
Cream of Wheat Corp., The, Minneapolis
Curvlite Surgical Products (Div. Mastercraft Plastics, Inc), Jamaica, N. Y.
Cutter Laboratories, Berkeley, Calif.
Davies, Rose & Co., Ltd., Boston
Davis, F. A., Co., Philadelphia
Davol Rubber Co., Providence, R. I.
Day's, Mrs., Ideal Baby Shoe Co., Danvers, Mass.
Detecto Scales, Inc., Brooklyn, N. Y.
Devereux Schools, Devon, Pa.
DeVilbiss Co., The, Somerset, Pa.
Dictaphone Corp., New York
Dietene Co., The, Minneapolis
Doak Pharmacal Co., New York
Doho Chemical Corp., New York
Dome Chemicals, Inc., New York
Duke Laboratories, Inc., South Norwalk, Conn.
du Pont de Nemours, E. I., and Co., Inc., Wilmington, Del.
Eastman Kodak Co., Rochester, N. Y.
Eaton Laboratories, Norwich, N. Y.
Edin Co., Inc., Worcester, Mass.
Edison, Thomas A., Industries of McGraw-Edison Co., West Orange, N. J.
Edwards Shoes, Inc., Philadelphia
Eisele & Co., Nashville, Tenn.
Elder, Paul B., Co., Bryan, Ohio
Electrodyne Co., Inc., Norwood, Mass.
Electro-Therapeutic Instrument Co., Broadview, Ill.
Emerson, J. H., Co., Cambridge, Mass.
Encyclopaedia Britannica, New York
Encyclopedia Americana, Grand Rapids, Mich.
Endo Laboratories, Inc., Richmond Hill, N. Y.
Essential Electronics Corp., Cleveland
Ethicon-Fenwal, Somerville, N. J.
Ethicon, Inc., Somerville, N. J.
Everest & Jennings, Inc., Los Angeles
Evron Co., Inc., The, Chicago
Fazio, Thomas, Laboratories, Auburndale, Mass.
Federation of Catholic Physicians' Guilds, St. Louis
Fellows Medical Mfg. Co., Inc., New York
Felt & Tarrant Mfg. Co., Chicago
Field Enterprises, Inc., Educational Division, Chicago
Fischer, H. G., & Co., Franklin Park, Ill.
Fisher-Stevens, Inc., Clifton, N. J.
Fleet, C. B., Co., Inc., Lynchburg, Va.
Foregger Co., Inc., The, New York
Fougera, E., & Co., Inc., New York
Geigy Pharmaceuticals, Div. of Geigy Chemical Corp., Yonkers, N. Y.
General Electric Co. (Major Appliance Div.), Louisville, Ky.
General Electric Co. (X-Ray Department), Milwaukee
General Foods Corp., White Plains, N. Y.
Gerber Products Co., Fremont, Mich.
Geriatric Pharmaceutical Corp., Bellerose, L. I., N. Y.
Gordon, M. J., Consultants, New York
Graf-Apsco Co., The, Chicago
Grand Central Camera Exchange, Inc., New York
Gray Manufacturing Co., New York
Gray Pharmaceutical Co., Inc., Newton, Mass.
Grolier Society, Inc., New York
Grune & Stratton, Inc., New York
Hamilton Mfg. Co., Two Rivers, Wis.
Hanovia Chemical & Manufacturing Co., Newark, N. J.
Health Insurance Council, New York
Heinz, H. J., Co., Pittsburgh
Heitz, Karl, Inc., New York
Hoeber, Paul B., Inc. (Medical Book Dept. of Harpers & Bros.), New York
Hoffmann-LaRoche, Inc., Nutley, N. J.
Holland-Rantos Co., Inc., New York
Hollister-Stier Laboratories, Philadelphia
Homemakers' Products Corp., New York
Identical Form, Inc., New York
Ille Electric Corp., Freeport, L. I., N. Y.
International Business Machines Corp., New York
International College of Surgeons, Chicago
International Medical Research Corp., New York
International Syringe Corp., Los Angeles
Ivanhoe Enterprises, Inc., Hempstead, N. Y.
Ives-Cameron Co., Div. American Home Products, Philadelphia
Jackson-Mitchell Pharmaceuticals, Inc., Culver City, Calif.
Jacuzzi Bros., Inc., St. Louis
Johnson & Johnson, New Brunswick, N. J.
Jones, Jesse, Box Corp., Philadelphia
Jones Metabolism Equipment Co., Inc., Chicago
Kadan, D. A., Co., Yonkers, N. Y.
Keeler Optical Products, Philadelphia
Kellogg Co., Battle Creek, Mich.
Key Corp., New York
Kiddie Mfg. Co., Bloomfield, N. J.
Knox, Charles B., Gelatine Co., Johnstown, N. Y.
Kremers-Urban Co., Milwaukee
Lafayette Pharmacal, Inc., Chicago
Lakeside Laboratories, Inc., Milwaukee
Lea & Febiger, Philadelphia
Lederle Laboratories Div., American Cyanamid Co., Pearl River, N. Y.

106th ANNUAL MEETING

Leeming, Thos., & Co., Inc., New York
Liberty Protective Leathers, Inc., Gloversville, N. Y.
Liebel-Flarsheim Co., The, Cincinnati
Lilly, Eli, & Co., Indianapolis
Lincoln Laboratories, Inc., Decatur, Ill.
Linde Air Products Co., Div. of Union Carbide & Carbon Corp., New York
Lippincott, J. B., Co., Philadelphia
Little, Brown & Co., Boston
Lloyd Bros, Inc., Cincinnati
Loma Linda Food Co., Arlington, Calif.
Long Island Engraving Co., The, College Point, N. Y.
Luzier's, Inc., Kansas City, Mo.
M.D. Publications, Inc., New York
Machlett Laboratories, Inc., Springdale, Conn.
Macmillan Co., The, New York
Macy, Jr., Josiah, Foundation, New York
Maico Co., Inc., The, Minneapolis
Mallinckrodt Chemical Works, St. Louis
Maltbie Laboratories, Div. Wallace & Tiernan, Inc., Belleville, N. J.
Manhattan Uniform Co., Chicago
Marcelle Cosmetics, Inc., Chicago
Mark Co., Randolph, Mass.
Massachusetts Indemnity and Life Insurance Co., Boston
Massengill, S. E., Co., The, Bristol, Tenn.
Mattern X-Ray Div., Land-Air, Inc., Chicago
McCarty's, Inc., Oakland, Calif.
McKesson Appliance Co., Toledo, Ohio
McNeil Laboratories, Inc., Philadelphia
Mead Johnson & Co., Evansville, Ind.
Medco Products Co., Inc., Tulsa, Okla.
Medical Bureau, The, Chicago
Medical Case History Bureau, New York
Medical Dental Photo Co., Levittown, N. Y.
Medical Fabrics Co., Inc., Paterson, N. J.
Medical Film Guild, New York
Mennen Co., The, Morristown, N. J.
Merck & Co., Inc., Rahway, N. J.
Merck Sharp & Dohme, Div. of Merck & Co., Inc., Philadelphia
Merrell, Wm. S., Co., Cincinnati
Merrill Lynch, Pierce, Fenner & Beane, New York
Miles Laboratories, Inc., Elkhart, Ind.
Miles Reproducer Co., New York
Milex of New York, Long Island City, N. Y.
Miller Surgical Co., Chicago
Monaghan, J. J., Co., Inc., Denver
Mosby, C. V., Co., The, St. Louis
Mutual of Omaha, Omaha
NRD Instrument Co., St. Louis
National Biological Laboratories, Falls Church, Va.
National Brands Div. of Sterling Drug, Inc., New York
National Dairy Council, Chicago
National Drug Co., The, Philadelphia
National Electric Instrument Co., Inc., Elmhurst, N. Y.
National Live Stock and Meat Board, Chicago
Natural-Brest Co., New York
Nepera Chemical Co., Inc., Yonkers, N. Y.
New England Journal of Medicine, Boston
New York Medical Exchange, New York
New York State Journal of Medicine, New York
Nordmark Pharmaceutical Laboratories, Inc. Irvington, N. J.
North American Philips Co., Inc., Mt. Vernon, N. Y.
Nursmatic Corp., Chicago
NuVogue Creations, Cleveland
Obrig Laboratories, Inc., New York
Ohio Chemical and Surgical Equipment Co., Madison, Wis.
O'Leary, Lydia, Inc., New York
Organon, Inc., Orange, N. J.
Ortho Pharmaceutical Corp., Raritan, N. J.
Otarion, Inc., Dobbs Ferry, N. Y.
Oxford University Press, Inc., New York
Parke, Davis & Co., Detroit
Patch, E. L., Co., The, Stoneham, Mass.
Pelton & Crane Co., The, Charlotte, N. C.
Pepperidge Farm, Inc., Norwalk, Conn.
Pepsi-Cola Co., New York
Pet Milk Co., St. Louis
Pfizer Laboratories, Brooklyn, N. Y.
Pharmacia Laboratories, Inc., Rochester, Minn.
Pharmaseal Laboratories, Glendale, Calif.
Picker X-Ray Corp., White Plains, N. Y.
Pitman-Moore Co., Indianapolis
Plough, Inc., Memphis, Tenn.
Postgraduate Medicine, Minneapolis
Premo Pharmaceutical Laboratories, Inc., South Hackensack, N. J.
Prior, W. F., Co., Inc., Hagerstown, Md.
Procter & Gamble Co., The, Cincinnati
Professional Printing Co., Inc., New Hyde Park, L. I., N. Y.
Profexray, Inc., Maywood, Ill.
Propper Mfg. Co., Inc., Long Island City, N. Y.
Publishers' Authorized Bindery Service, Chicago
Purdue Frederick Co., The, New York
Puritan Compressed Gas Corp., Kansas City, Mo.
Pyramid Rubber Co., The, Ravenna, Ohio
Radium Chemical Co., Inc., New York
Ralston Purina Co., St. Louis
Raytheon Mfg. Co., Waltham, Mass.
Reed & Carnrick, Jersey City, N. J.
Resident Physician, Manhasset, N. Y.
Revlon, Inc., New York
Rexall Drug Co., Los Angeles
Riker Laboratories, Inc., Los Angeles
Ritter Co., Inc., Rochester, N. Y.
Robins, A. H., Co., Inc., Richmond, Va.
Roerig, J. B., & Co., Chicago
Rorer, William H., Inc., Philadelphia
Ross Laboratories, Columbus, Ohio
Rystan Co., Mt. Vernon, N. Y.
Sanborn Co., Waltham, Mass.
Sandoz Pharmaceuticals, East Hanover, N. J.
Saratoga Springs Authority, Saratoga Springs, N. Y.
Saunders, W. B., Co., Philadelphia
Schenley Laboratories, New York
Schering Corp., Bloomfield, N. J.
Schieffelin & Co., New York
Schmid, Julius, Inc., New York
Scholl Mfg. Co., Inc., The, Chicago
Sealy, Inc., Chicago
Searle, G. D., & Co., Chicago
Seven-Up Co., The, St. Louis
Shampaine Co., St. Louis
Shay Medical Agency, Chicago
Shelley Dental Mfg. Co.
Simmons Co., Chicago
Smith, Kline & French Laboratories, Philadelphia
SoundScriber Corp., The, New Haven, Conn.
Spindler & Sauppe, Los Angeles
Squibb, E. R., & Sons, New York
Standard X-Ray Co., Chicago
Stanton Scientific Equipment Co., Glendale, Calif.
State Medical Journal Advertising Bureau, Inc., Chicago
Stephenson Corp., Red Bank, N. J.
Storck Pharmaceuticals, St. Louis
Strasenburgh, R. J., Co., Rochester, N. Y.
Stuart Co., The, Pasadena, Calif.
Sturgis-Grant Productions, Inc., New York
Sunkist Growers, Los Angeles
Swift & Co., Chicago
Tampax Incorporated, New York
Taylor Instrument Companies, Rochester, N. Y.
Teca Corp., White Plains, N. Y.
Telephone Answering Service, Canton, Ohio
Testagar & Co., Inc., Detroit
Thomas, Charles C Publisher, Springfield, Ill.
Times Facsimile Corp., New York
Training School at Vineland, The, Vineland, N. J.
Tru-Eze Mfg. Co., Inc., Burbank, Calif.
Tutag, S. J., & Co., Detroit
U. M. A., Inc., New York
U. S. Vitamin Corp., New York
Universal X-Ray Products, Inc., Chicago
Upjohn Co., The, Kalamazoo, Mich.
Walgreen Co., Chicago
Walker Laboratories, Inc., Mt. Vernon, N. Y.
Wallace Laboratories, Div. of Carter Products, Inc., New Brunswick, N. J.
Walton Laboratories, Inc., Irvington, N. J.
Warner-Chilcott Laboratories, Morris Plains, N. J.
Welch Allyn, Inc., Skaneateles Falls, N. Y.
Westinghouse Electric Corp. (X-Ray Dept.), Baltimore
Westwood Pharmaceuticals, Div. of Foster-Melburn Co., Buffalo
White Laboratories, Inc., Kenilworth, N. J.
Williams & Wilkins Co., The, Baltimore
Winthrop Laboratories, Inc., New York
Wolf X-Ray Products, Inc., Brooklyn, N. Y.
Woodward Medical Personnel Bureau, Chicago
World Medical Association, The, New York
Wyeth Laboratories, Philadelphia
Year Book Publishers, Inc., The, Chicago
Yorke Publishing Co., Inc., The, New York
Young, F. E., & Co., Chicago
Zeiss, Carl, Inc., New York
Zenith Radio Corp.—Hearing Aid Div., Chicago
Zimmer Mfg. Co., Warsaw, Ind.

ORGANIZATION SECTION

CIVIL DEFENSE RESEARCH PROJECT

The Board of Trustees recently authorized the A. M. A. Council on National Defense to go ahead with a research project proposed by the Federal Civil Defense Administration to study the best method of providing medical care to the surviving population—casualty and noncasualty—in the event of an enemy attack. Plans for such an exhaustive study are now under way, and Council Secretary Frank W. Barton estimates that the project will require 12 to 15 months to complete. The cost, estimated at $150,000, will be financed by the Federal Civil Defense Administration.

The Trustees looked with favor on the study because they felt that physicians would carry the primary burden and final responsibility for providing medical care for the American people in the event of a national emergency.

In explaining the project to the Board, Mr. Barton said that a special committee, under the direction of the Council, will be responsible for the establishment, planning, and direction of the study. Membership will consist of two members of the Council on National Defense, two from the Council on Medical Service, and two physicians, who will be selected from the geographical area in which a field study will be made. Representatives of the Federal Civil Defense Administration, the U. S. Public Health Service, and national health and medical organizations will assist the six-member committee.

The committee members will be named early in April during the regular meetings of the Council on National Defense and the Council on Medical Service. The committee will then meet with Civil Defense Administration officials in Battle Creek, Mich., for briefing purposes and also to select the metropolitan area to be studied. Later, the state and local medical societies in that area will be asked to name two local physicians who will also serve on the committee.

CONFERENCE ON DEPENDENTS' MEDICAL CARE

Officials of the American Medical Association and the executive director of the office for dependents' medical care met recently in Washington, D. C., to discuss progress on the medical care program for dependents. In attendance at the conference were (left to right) Dr. Hugh H. Hussey, Dr. Joseph D. McCarthy, Major Gen. Paul I. Robinson, Dr. Edwin S. Hamilton, and Dr. James R. Reuling. Dr. McCarthy is Chairman of the Council on Medical Service, A. M. A., while Drs. Hussey, Hamilton, and Reuling are on the A. M. A. Board of Trustees.

Conference on Dependents' Medical Care.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

POSTGRADUATE COURSES

The following postgraduate courses, not previously listed in THE JOURNAL, have been reported to the Council:

The University of Oregon Medical School, Portland, will offer a 2½-day 18-hour continuous course in **pediatrics**, May 6-8, 1957, for physicians in general practice and in part-time specialty practice. Educational methods will include patient demonstrations and ward rounds, live clinics, laboratory work, seminar and panel discussions, lecture, open question periods, and visual aids. Fee $25.

May 20-24, 1957, the University of Oregon Medical School will offer a 5-day 35-hour concentrated course in **electrocardiography** for physicians in general practice and in part-time specialty practice. In addition to educational methods mentioned above, enrolled physicians will have an opportunity to practice interpreting electrocardiograms. Fee $50. Write to Dr. Charles N. Holman, Medical Director and Professor of Medicine at the school, 3181 S. W. Sam Jackson Park Rd., Portland, Ore.

A 2-day 14-hour postgraduate course in **otolaryngology** for physicians in general practice will be given May 24-25, 1957, at the University of California Medical Center Hospital, San Francisco. New techniques and drugs as well as surgical progress will be reviewed by lectures, symposiums, question-and-answer sessions, live clinics, and operative clinics for small groups of the enrollees. Instructors are all members of the faculties of the University of California schools of medicine or dentistry. H. C. Moffitt Hospital, Children's Hospital, and Hahnemann Hospital are cooperating in providing facilities for the operative sessions. Fee $40. Write to Dr. Seymour M. Farber, Head of Medical Extension, University of California Medical Center, San Francisco 22.

MEDICAL NEWS

CALIFORNIA

Meeting on Arthritis and Rheumatic Disorders.—At a meeting of the Northern California Chapter of the Arthritis and Rheumatism Foundation in cooperation with the University of California School of Medicine and Medical Extension on May 16-17, in Classroom F, University of California Hospital, Third and Parnassus avenues, San Francisco, the guest lecturers will be Dr. Leon Sokoloff, National Institutes of Health, Bethesda, Md.; Dr. Charles A. Ragan Jr., associate professor of medicine, Columbia University College of Physicians and Surgeons, New York City; and Dr. Russell L. Cecil, director, Arthritis and Rheumatism Foundation, New York. Informal panel discussions are planned, and question-and-answer periods also are planned. Information may be obtained from Dr. Seymour M. Farber, Head of Medical Extension, University of California Medical Center, San Francisco 22.

GEORGIA

Appoint Medical Director of Heart Association.—Dr. Eugene B. Ferris, formerly chairman department of medicine, Emory University School of Medicine, Atlanta, has been appointed medical director of the American Heart Association, of which he is a past vice-president. Dr. Ferris formerly served also as professor of medicine at the University of Cincinnati College of Medicine. His earlier activities included the editorship of the *American Journal of Clinical Investigation* and the presidencies of the American Society for Clinical Investigation and the American Psychosomatic Society.

INDIANA

Appoint Chairman of Department.—Dr. William M. M. Kirby has been appointed chairman of the department of medicine, Indiana University School of Medicine. A member of the faculty of the University of Washington School of Medicine, Seattle, for the last eight years, Dr. Kirby will fill the vacancy created by the retirement of Dr. James O. Ritchey at the statutory age limit of 65. Dr. Ritchey, however, will continue as a member of the faculty. Dr. Kirby became associate professor at the University of Washington in 1949 and was named full professor of medicine in 1955.

MARYLAND

Arthritis Clinics on Fridays.—The first Friday of every month, at 11:00 a. m., the Maryland Chapter of the Arthritis and Rheumatism Foundation conducts an arthritis clinic at the Baltimore League for Crippled Children and Adults, 827 St. Paul St., Baltimore. All Maryland doctors are invited to refer to this clinic any of their patients who are suffering from arthritis and rheumatism. Patients will receive no treatment but will be examined by members of the chapter's medical committee and a report sent to the referring physicians proposing a treatment program. There is no charge for this service. Telephone: Lexington 9-3087.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education, and public health. Programs should be received at least three weeks before the date of meeting.

MICHIGAN

Annual Clinic Day in Lansing.—The 29th annual "May Clinic Day" sponsored by the Ingham County Medical Society will be held May 2 at the Olds Hotel, in Lansing. Dr. C. Walton Lillehei, professor of surgery, University of Minnesota Medical School, Minneapolis, will speak on "Cardiac Surgery." Afternoon papers and speakers include:

Depressive Reactions, Franklin G. Ebaugh, clinical professor of psychiatry, University of Colorado School of Medicine, Denver.

Hypothyroidism and Hypometabolism, Laurence H. Kyle, associate professor of medicine, Georgetown University School of Medicine, Washington, D. C.

Surgical Emergencies in the Newborn, Willis J. Potts, professor of surgery, Northwestern University Medical School, Chicago.

Recent Developments of New Radioisotope Techniques for Measuring Liver and Kidney Functions, George V. Taplin, research physician, Atomic Energy Project, University of California, Los Angeles.

MINNESOTA

State Medical Meeting.—The 104th annual meeting of the Minnesota Medical Association will be held May 13-15 at the St. Paul Municipal Auditorium, St. Paul. The program includes panel discussions on "Heart Disease in Pregnancy," "The Acute Abdomen," "Palliative Treatment of Cancer," and "Management of Acute Injuries." Round-table luncheons, question-and-answer periods, and special dinners are also planned. The Russell D. Carman Memorial Lecture will be given by Prof. Dr. Hans-Heinrich Berg, Hamburg, Germany. Speaker at the annual banquet, May 14, will be Rear Admiral Hyman G. Rickover, Washington, D. C.

NEW JERSEY

State Medical Meeting.—The 191st annual meeting of the Medical Society of New Jersey will be held April 27-May 1, at the Haddon Hall, Atlantic City. The general session will include a forum on medical-legal testimony. A session on mental health will feature a film, "The General Practitioner in Psychiatry." A symposium on severe visual disability will be moderated by Dr. John Scillieri, Paterson. A clinical pathological conference moderated by Dr. George L. Erdman, Summit, scientific exhibits, and a dinner dance are also scheduled. Topics by out-of-state speakers include:

Management of Wasp Allergy, Mary E. H. Loveless, associate professor of clinical medicine, Cornell University Medical College, New York City.

Surgical Treatment for Intercardian Defects, Henry T. Bahnson, associate professor of surgery, Johns Hopkins University School of Medicine, Baltimore.

Geriatric Dermatology, Leslie Nicholas, associate professor of dermatology, Hahnemann Medical College and Hospital of Philadelphia, Philadelphia.

Treatment of Thyroid Disease, Martin Perlmutter, chief, endocrinology clinic, Maimonides Hospital, Brooklyn.
Metabolism and Bone Disease (Except Hyperparathyroid Disease) Isidore Snapper, New York City, director, Department of Medicine and Medical Education, Beth-El Hospital, Brooklyn.

For information write Medical Society of New Jersey, 315 W. State St., Trenton 8.

NEW YORK

Institute on Correctional Psychiatry.—A joint institute on correctional psychiatry and group counseling will be held by the New York State Departments of Mental Hygiene and Correction at Hudson River State Hospital, Poughkeepsie, May 20-24. The discussions will take up the theories of criminal responsibility, preservation of inmates' confidence, the function of special examinations, correct use of observation, and the role of psychiatric diagnosis in modern correctional study and rehabilitation. A unique feature of the program will be a discussion and demonstration of group counseling methods in a prison setting by Norman Fenton, Ph.D., deputy director, classification and treatment, California Department of Correction. For information call Mrs. Margaret M. Farrar, Albany 5-7317, ext. 4.

New York City

University News.—Dr. Dana W. Atchley will deliver the annual Phi Lambda Kappa Lecture of the New York University College of Medicine at 4:30 p. m. April 30, in the Amphitheatre, Bellevue Psychiatric Hospital, 30th Street near First Avenue, on "Science in Medical Education." Dr. Atchley is professor of clinical medicine at the College of Physicians and Surgeons, Columbia-Presbyterian Medical Center.

Personal.—Dr. Frederick S. Reiss, associate clinical professor of dermatology and syphilology, New York University Postgraduate Medical School, New York City, was "Visiting Chief Pro Tem" at the Atlantic City Hospital, Atlantic City, N. J., Jan. 20-27.

OREGON

Appoint Dr. Holman Associate Dean.—The appointment of Dr. Charles N. Holman as associate dean of the University of Oregon Medical School, Portland, has been announced. He will continue to serve as medical director and administrator of the school's hospitals and clinics and as administrator of the medical school hospital. Dr. Holman is the first associate dean to be appointed at the institution since Dr. David W. E. Baird Jr. assumed that title in 1937. He is currently serving on executive boards of the Oregon Division of the American Cancer Society and the Oregon Tuberculosis and Health Association.

PENNSYLVANIA

Philadelphia

Open Vertigo Clinic.—The department of otorhinology, Temple University Medical Center, Philadelphia, has announced the opening of a special clinic for the study of the problems of the labyrinth, or internal ear. "The Vertigo Clinic" will be held each Tuesday and Wednesday at 1:30 p. m. in the Ear, Nost and Throat Clinic in the new outpatient building. Patients may be referred by family physicians, otologists, and other practitioners. Complete survey of the patient will be made with appropriate hearing and labyrinthine studies, and the report will be returned to the referring physician.

Personal.—Dr. John J. Hanlon resigned as chief, Public Health Division, International Cooperation Administration (Point Four), Washington, D. C., to accept the post of director of public health services, Philadelphia, as of April 1. He will also serve as professor of public health and preventive medicine at the Temple University School of Medicine, Philadelphia.

WISCONSIN

Eben J. Carey Memorial Lecture.—The Alpha Lambda Chapter of the Phi Delta Epsilon Fraternity at Marquette University School of Medicine, Milwaukee, will hold its 10th annual Eben J. Carey Memorial Lecture April 24, when Dr. Randall G. Sprague, Mayo Clinic, Rochester, Minn., will discuss "Progress in the Study of Cushing's Syndrome."

GENERAL

Congress of Physical Medicine and Rehabilitation.—The Midwestern section of the American Congress of Physical Medicine and Rehabilitation will be held in Rochester, Minn., May 3-4. There will be a scientific session as well as tours of the various facilities in the clinic. For information write Dr. Gordon M. Martin, Section of Physical Medicine and Rehabilitation, Mayo Clinic, Rochester, Minn.

Overseas Activities of American Universities.—A study of the numerous overseas activities of American universities will be conducted by Michigan State University, East Lansing, with a grant of $268,400 from Carnegie Corporation of New York. The study, to be conducted under the leadership of Edward W. Weidner, Ph.D., head of the political science department, will seek to appraise these activities and to identify the most promising lines for future development.

Meeting on Sports Medicine in New York.—The fourth annual meeting of the American College of Sports Medicine will be held at the Hotel Barbizon-Plaza, New York City, June 7-8. A panel discussion, "Exercise in Health and Disease," is featured. Open discussions will follow the reading of the prepared papers. Speaker at the dinner will be Shane MacCarthy, executive director, President's Council on Youth Fitness. Chairman of committee for arrangements is Raymond A. Weiss, associate professor of Education, School of Education, New York University.

International Conference on Audiology.—An International Conference on Audiology will be held at the Chase Hotel, St. Louis, May 13-16. The following topics will be discussed: the assessment of auditory function, the physiology of audition, and the relation of hearing loss to noise exposure. There will be a nominal registration fee, not yet determined. The conference is being partly supported by a grant from the National Science Foundation to the Central Institute for the Deaf. For information write S. R. Silverman,

Chairman, International Conference on Audiology, Central Institute for the Deaf, 818 South Kingshiway, St. Louis, 10.

International Congress of Otolaryngology.—The sixth International Congress of Otolaryngology will be held May 5-10 in the Hotel Statler, Washington, D. C. A special session on "Chronic Suppuration of the Temporal Bone" will be conducted by Dr. Marcus Diamant, Halmstad, Sweden; Prof. Luzius Rüedi, Zürich, Switzerland; and Prof. Horst Wullstein, Würzburg, Germany. Besides the five general sessions, three film sessions and sight-seeing and medical tours to nearby medical and health centers are planned. Papers at the general sessions will be given in German, French, Spanish, or English. Entertainment features include a reception and tour of the international galleries of art and a concert in Constitution Hall. The grand banquet will be held in the Presidential Ballroom, May 9. Information may be obtained from the International Congress of Otolaryngology, General Secretary, 700 N. Michigan Ave., Chicago, 11.

Announce Research Fellowships.—The Lederle Laboratories Division of the American Cyanamid Company announces that it is making available to medical schools throughout the United States and Canada Lederle medical student research fellowships for the year 1957. The fellowships, in amounts not exceeding $600 a year for any one individual, are intended to assist students who desire to devote their summer vacations to research in the basic (preclinical) medical sciences. Applicants must be of good scholastic standing and have the consent of the faculty member under whose supervision their research is to be conducted. Selection of students to receive such awards will be made by the dean of the medical school, or by the committee charged with such selections. For information write: Lederle Laboratories Division, American Cyanamid Company, Pearl River, N. Y.

New England Rural Health Conference.—The second annual New England Rural Health Conference will be held April 25 at the Congregational Christian Conference Center, Pembroke, N. H. There is no registration fee. A special discussion, "Meeting Health Needs in New England," will be moderated by Dr. Leon R. Lezer, University of Vermont College of Medicine, Burlington, Vt. The program includes "Prepayment of Medical Care" by Dr. Franz Goldman, Boston, associate professor of medical care, Harvard University School of Public Health, Boston, and two reports on aging: the medical aspects by Dr. Robert P. Smith, staff, Bishop DeGoesbrian Hospital, Burlington, Vt.; and the nursing aspects by Muriel Bigelow, R. N., South Paris, Me. Information and luncheon reservations ($1.75) may be obtained from the New Hampshire Medical Society, 18 School St., Concord, N. H. (Telephone: Capitol 4-1909).

Bacteriologists Meet in Detroit.—The 57th general meeting of the Society of American Bacteriologists will be held April 28-May 2. The scientific session will be held in the Sheraton-Cadillac and Statler hotels in Detroit. Program sessions are given under five divisions: medical, general, physiological, agricultural and industrial, and public health. A special lecture, "The Science of the Interrelation Between Food and Micro-organisms," will be given by D. A. A. Mossel, Utrecht, The Netherlands. Some 200 papers will be presented by foreign and American authors. Symposiums, motion picture sessions, exhibits, special tours, and a panel discussion on antiseptic and disinfectant testing are scheduled. The annual banquet will be held in the Sheraton-Cadillac ballroom, 7:00 p. m., May 1. Registration fee is $10 for members, $11 for nonmembers. For information write E. M. Foster, Secretary, Society of American Bacteriologists, University of Wisconsin, Madison, Wis.

Syphilis Again on the Increase.—The American Social Hygiene Association reported in February that a national survey revealed the number of cases of infectious syphilis and total syphilis have increased in the United States for the first time since 1948. The study, conducted jointly by the American Social Hygiene Association, the Association of State and Territorial Health Officers, and the American Venereal Disease Association, was compiled from the reports of 145 health departments representing all 48 states, 94 of the nation's cities with populations of 100,000 or over, and three territories. The survey revealed the following about venereal disease: rates are rising statewide in 19 states; control programs are inadequate in 35 states; teenage venereal disease is increasing in 11 states; new epidemic outbreaks are reported in 19 states; and Armed Forces personnel, transient laborers, and other mobile groups are listed by 32 states and 15 city health officers as major problems in venereal disease control.

Scientific Translations Center in Chicago.—The Special Libraries Association announces that a grant of $20,350 from the National Science Foundation provides for support of a Scientific Translations Center at the John Crerar Library in Chicago. The center will be a depository for translations contributed or loaned by government agencies, scientific societies, industrial laboratories, universities, and similar organizations. Originally established in 1953 as the association's translation pool, the center has been depository for translations from all languages other than Russian. Translations from the Russian, now held by the Library of Congress, will be transferred to the center by the end of 1956, thus creating one central information source on translations. Information about the center may be obtained from John P. Binnington, Librarian, Brookhaven National Laboratory, Upton, N. Y.

Infantile Paralysis Foundation Fellowships.—The National Foundation for Infantile Paralysis has announced a limited number of fellowships for medical students who wish to take advantage of vacation time for study during the calendar year of 1957. The program provides six fellowships for each approved medical school, two in each of the following categories: (1) research in the biological and physical sciences related to medicine; (2) public health and preventive medicine; and (3) rehabilitation. A new policy will permit schools which utilized their full quota in rehabilitation and public health and preventive medicine in 1956 to nom-

inate one extra student in each of these categories in 1957. Students must have completed one year toward the M.D. degree to be eligible for the research program and two years in order to qualify for each of the other fellowships. The stipend is $200 per month for a minimum of three months. Medical students must have at least eight weeks of consecutive free time for study. Application forms should be requested from the dean of the school where the student is enrolled. The application, after recommendation by the dean, must be submitted to the foundation for approval at least eight weeks before the program begins. For information write Professional Education Division, National Foundation for Infantile Paralysis, 301 E. 42nd St., New York 17, N. Y.

Psychiatrists Meet in Chicago.—The American Psychiatric Association will hold its 113th annual meeting at the Morrison Hotel, Chicago, May 13-17. Some 130 papers, exhibits, films, and symposiums and round-table meetings are scheduled. Dr. Gregory Zilboorg, New York City, will give the Academic Lecture on "The Life and Works of Dr. Eugen Blueler." There will be a theoretical symposium on psychiatric nosology and a special Adolph Meyer Research Lecture by Dr. Stig Akerfeldt of the Nobel Institute, Stockholm, Sweden, on "Serological Reactions of Psychiatric Patients to N,N,dimethyl phenyline diamine." For information write Mr. Robert L. Robinson, American Psychiatric Association, 1785 Massachusetts Ave. N. W., Washington 6, D. C.

CANADA

Personal.—Dr. Jean A. Vezina, radiologist from Laval University, Quebec, has received a three-month appointment as a resident physician at the medical division of the Oak Ridge Institute of Nuclear Studies in Oak Ridge, Tenn.

Purchase Accelerator for Cancer Research.—The Ontario Cancer Institute, Toronto, has purchased a 3-million-volt Van de Graaff particle accelerator from High Voltage Engineering Corporation, Burlington, Mass. According to Dr. Clifford L. Ash, director, the machine will be used for fundamental biological research in cancer and the investigation of neutron therapy. The institute will serve as a radiotherapy center for teaching hospitals of the University of Toronto Faculty of Medicine, Toronto. Radiotherapy equipment will include radioactive cobalt and cesium units as well as a betatron.

FOREIGN

International Hepatology Conference.—An international conference on hepatology will be held in Perugia, Italy, June 18-20, under the auspices of the Medical Clinic of the University of Perugia and its director, Prof. Giorgio Dominici. Experts from France, England, and the United States will participate. The subjects to be dealt with are liver biopsy and acute and subacute hepatic atrophy. Contributions must be sent no later than April 30. For information write Dr. G. Menghini, Secretary, Clinica Medica (Policlinico), Perugia, (Italy).

EXAMINATIONS AND LICENSURE

AMERICAN BOARD OF ANESTHESIOLOGY: *Part I.* Various locations, July 19. Final date for filing application was Jan. 19. *Oral.* Asheville, No. Car., Mar. 24-29. Sec., Dr. Curtiss B. Hickcox, 80 Seymour St., Hartford 15, Conn.

AMERICAN BOARD OF DERMATOLOGY: *Written.* Several cities, June 27. *Oral.* Baltimore, Oct. 11-13. Final date for filing application is April 1. Sec., Dr. Beatrice Maher Kesten, One Haven Ave., New York 32.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* Oct. 21. *Oral.* Chicago, May 27-29; Los Angeles, Sept. 11-14. Final date for filing applications was Feb. 1. Exec. Sec., Dr. W. A. Werrell, 1 West Main St., Madison 3, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: Examination given twice annually, in the spring and fall. In order to be eligible a candidate must have his application filed at least six months before the examination time. Sec., Dr. Leonard T. Furlow, Washington University School of Medicine, St. Louis 10.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Part II.* Chicago, May 15-25. Final date for filing application was Feb. 1. Sec., Dr. Robert L. Faulkner, 2105 Adelbert Road, Cleveland 6, Ohio.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral.* New York, May 23-27; Chicago, Oct. 7-11. *Written.* January 1958. Final date for filing application is July 1. Sec., Dr. Merrill J. King, Box 236, Cape Cottage Branch, Portland 9, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Part II.* New York City, Jan. 29-31, 1958. Final date for filing application is August 15. Sec., Dr. Sam W. Banks, 116 South Michigan Avenue, Chicago 3.

AMERICAN BOARD OF OTOLARYNGOLOGY: Chicago, Oct. 7-11. Final date for filing application is April. Sec., Dr. Dean M. Lierle, University Hospitals, Iowa City.

AMERICAN BOARD OF PHYSICAL MEDICINE AND REHABILITATION: *Parts I and II.* New York City, June 8-9. Final date for filing application is March 1. Sec., Dr. Earl C. Elkins, 200 First St., S. W., Rochester, Minn.

AMERICAN BOARD OF PLASTIC SURGERY: *Entire Examination.* Philadelphia, May 4-6. Final date for filing case reports was Jan. 1. Corres. Sec., Mrs. Estelle E. Hillerich, 4647 Pershing Ave., St. Louis 8.

AMERICAN BOARD OF PREVENTIVE MEDICINE: *Aviation Medicine.* Denver, May 9-11. *Occupational Medicine.* St. Louis, April 26-28. Sec., Dr. Thomas F. Whayne, 615 North Wolfe St., Baltimore.

AMERICAN BOARD OF PROCTOLOGY: *Oral and Written. Parts I and II.* September. Sec., Dr. Stuart T. Ross, 520 Franklin Ave., Garden City, N. Y.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: New York, Dec. 16-17. Sec., Dr. David A. Boyd, Jr., 102-110 Second Ave., S. W., Rochester, Minn.

AMERICAN BOARD OF RADIOLOGY: Washington, Sept. 23-28. Final date for filing application is June 1. Within the near future a special examination for certification in Nuclear Medicine will be offered to diplomates in Radiology and Therapeutic Radiology. Sec., Kahler Hotel Bldg., Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Part II.* New York, June 10-11. Sec., Dr. John B. Flick, 225 S. 15th St., Philadelphia 2.

AMERICAN BOARD OF UROLOGY: *Written examination.* Various cities throughout the country. *Pathology and Oral Clinical.* February 1958. Location not decided. Exec. Secretary, Mrs. Ruby L. Griggs, 30 Westwood Road, Minneapolis 16.

BOARD OF THORACIC SURGERY: *Written.* Various centers throughout the country, September 1957, and the closing date for registration is July 1, 1957. Sec., Dr. William H. Tuttle, 1151 Taylor Ave., Detroit 2.

GOVERNMENT SERVICES

NAVY

New Wing to Research Building Dedicated.—A new wing to the Naval Medical Research Building, National Naval Medical Center, Bethesda, Md., was dedicated on March 1, in ceremonies attended by naval officers, civilian medical educators, enlisted personnel, and their ladies. Rear Adm. Thomas F. Cooper, commanding officer, National Naval Medical Center, made the opening comments. The new three-story structure is an extension of the existing Medical Research Institute main building.

Dr. Howard T. Karsner, medical research advisor to the surgeon general of the Navy, the principal speaker at the ceremonies, outlined some of the past and current research projects of the institute. He said, "This new expansion of the physical plant of the Institute will provide much needed additional space, equipment and facilities so that research can continue in an increasingly favorable environment and the Navy can look forward to productive research of the highest order."

New wing of Naval Medical Research Building (right), comprising one-third of structure.

ATOMIC ENERGY COMMISSION

Inter-American Nuclear Energy Symposium.—An Inter-American Symposium on the Peaceful Applications of Nuclear Energy will be held May 13-17 at Brookhaven National Laboratory in Upton, L. I., N. Y. The agenda is designed to stimulate efforts among the American republics to develop the beneficial applications of nuclear energy. The symposium is being conducted by the Brookhaven National Laboratory and jointly sponsored by the Atomic Energy Commission, the Department of State, and the International Cooperation Administration. About 100 Latin American leaders in nuclear energy are being invited to participate.

Special attention will be given to practical efforts to accelerate development of atomic energy programs that will embrace useful research and seek applications that are valuable. Major fields to be covered are administration, physical sciences and engineering, medicine, chemistry, agriculture and biology. Special discussion topics will be (1) uses of radioisotopes in industry, agriculture, and medicine; (2) nuclear reactor types and uses—prospects of nuclear energy as a source of commercial power; and (3) factors in organization and development of effective nuclear energy programs.

Following the five-day symposium, the participants will tour atomic energy facilities, hospitals, universities, and industry to observe how the atom is being put to work.

PUBLIC HEALTH SERVICE

Eight Promotions.—Surgeon General Leroy E. Burney on March 13 announced eight promotions in the commissioned corps of the Public Health Service. Three officers now serving as assistant surgeon generals were advanced to the rank equivalent to rear admiral or major general. They are Dr. David E. Price, who will fill a newly created post of deputy chief of the Bureau of Medical Services; Dr. Theodore J. Bauer, deputy chief of the Bureau of State Services; and Dr. C. J. Van Slyke, associate director (for extramural research) of the National Institutes of Health.

Five career officers were appointed assistant surgeon generals with a rank equivalent to that of rear admiral or brigadier general. They are Dr. Robert J. Anderson, chief, Communicable Disease Center, Atlanta, Ga.; Dr. Albert L. Chapman, chief, division of special health services, Bureau of State Services; Dr. J. Roderick Heller, director, National Cancer Institute; Dr. Robert J. Felix, director, National Institute of Mental Health; and Dr. John D. Porterfield, assistant surgeon general in the immediate office of the surgeon general.

MISCELLANEOUS

Three Hundred Forty-five Grants in Support of Science.—The National Science Foundation, on March 13, announced that 345 grants totaling $13,853,350 were awarded during the quarter ending Dec. 31, 1956, for the support of basic research in the sciences, for conferences in support of science, for exchange of scientific information, and for training of science teachers. This is the second group of awards to be made during fiscal year 1957. Since the beginning of the program in 1951, awards have been made totaling almost $49,900,000.

Grants were made to institutions and scientists in many states in the United States, in Alaska, Hawaii, Puerto Rico, and in Canada and Great Britain. The research fields included are anthropology, astronomy, chemistry, biology, physics, earth sciences, engineering sciences, mathematical sciences, and sociophysical sciences. The research grants were approved by the National Science Board on the recommendation of Dr. Alan T. Waterman, director of the foundation.

DEATHS

Murdock, Thomas Patrick ✻ Meriden, Conn.; since 1950 member of the Board of Trustees of the American Medical Association, died April 1, aged 69. Dr. Murdock was born in Meriden, March 6, 1888. Following his graduation from the Baltimore Medical College in 1910, he served an internship at St. Francis Hospital in Hartford and the Undercliff Tuberculosis Sanatorium in Meriden. He began private practice in Meriden in 1911 and in 1914 became attending physician at the Meriden Hospital, where he was chief of medical services from 1925 to 1949, when he retired. Dr. Murdock was a consultant at the Gaylord Farm Sanatorium in Wallingford, where he was a member of the board of directors and the medical advisory committee; the Institute of Living in Hartford, where he was chairman of the board of visitors; the Bristol (Conn.) Hospital; the Undercliff Tuberculosis Sanatorium; and the Silver Hills Foundation, New Canaan. From 1917 to 1919 Dr. Murdock served in the medical corps of the U. S. Army and during World War II was a member of the procurement and assignment committee for Connecticut. He was a member of the House of Delegates of the American Medical Association from 1943 to 1950, when he was elected a trustee to a five-year term and in 1955 was again reelected to a similar term. In 1949-1950 he was a member of its Judicial Council. He was appointed to represent the American Medical Association on the Board of Commissioners of the Blue Shield Commission for a term of three years, effective April, 1956, and the same year he was appointed by the chairman of the Board of Trustees to a committee "to gather the facts relative to the Salk vaccine and its use in the prevention of paralytic poliomyelitis." In 1953 he accepted an appointment by Governor Lodge as the physician member of the state commission, authorized by the 1953 General Assembly, to study the possibilities of the development of a regional professional school including medicine. In 1947 he was chairman of the A. M. A. committee to study the nursing problem in the United States and in 1948 was a member of a joint committee for the improvement of the care of the patient. He was a specialist certified by the American Board of Internal Medicine; a fellow of the American College of Physicians, serving as governor for Connecticut from 1946 to 1952; for many years a member and secretary of the Connecticut Medical Examining Board, of which he was a past-president; and for many years a chairman of the governing council of the Connecticut State Medical Society; past-president of the New Haven County Medical Society and the Meriden Medical Society; and a member of the board of directors of the Meriden Visiting Nurses Association from 1922 to 1947. He was a member of the advisory board of the Hartford, Connecticut Trust Company in 1926, a member of the board of corporators of the Meriden Savings Bank in 1921, and director of the Meriden Trust and Safe Deposit Company.

THOMAS P. MURDOCK, 1888-1957

Newcomb, Marcus Ward ✻ Browns Mills, N. J.; born July 28, 1880; Jefferson Medical College of Philadelphia, 1903; specialist certified by the American Board of Internal Medicine; member of the American College of Chest Physicians and the American Trudeau Society; fellow of the American College of Physicians; past president of the Burlington County Medical Society and the Medical Society of New Jersey; at one time president of the New Jersey Tuberculosis League; for many years president of the Burlington County Tuberculosis League; served in the New Jersey Assembly, where in 1935 and 1936 he was House Republican majority leader; a member for 30 years and vice-president of the Pemberton Township Board of Education; chairman for several years of the State Health Council of which he was a member since 1947; at one time health officer of Burlington; during World War I contract surgeon and tuberculosis examiner at Fort Dix; retired last October after 37 years as medical director and superintendent of the Marcus W. Newcomb Hospital for Chest Diseases in Lew Lisbon; consulting physician, Deborah Sanatorium in Browns Mills and the Burlington County Hospital in Mount Holly, where he died Jan. 18, aged 76, of coronary occlusion.

Moon, Louis Edwin ✻ Omaha; born in Audubon, Iowa, May 27, 1888; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1912; clinical professor of surgery at the Creighton University School of Medicine; specialist certified by the American Board of Surgery; co-founder of the American Board of Proctology and on the board of examiners for this specialty; served as president of the American Proc-

tologic Society; past-president and past treasurer of the Omaha Midwest Clinical Society; a member of the executive committee of the American Cancer Society, Nebraska Division; fellow of the American College of Surgeons and the International College of Surgeons; vice-chairman, 1951-1952, chairman, 1952-1953, Section on Gastro-Enterology and Proctology, American Medical Association; on the staffs of St. Joseph's, Immanuel Lutheran, Methodist, St. Catherine's, Children's Memorial, and Lutheran hospitals; vice-president of the First Federal Savings and Loan Association; director of the board, Salvation Army; director, Physicians Health and Casualty Insurance Company; died Dec. 30, aged 68, of coronary thrombosis.

Campbell, Coyne Herbert ✱ Oklahoma City, Okla.; born in Davidson, March 4, 1904; Rush Medical College, Chicago, 1928; professor of psychiatry and neurology at the University of Oklahoma School of Medicine; certified by the National Board of Medical Examiners and specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association and the Central Neuropsychiatric Association; fellow of the American College of Physicians; superintendent of the Coyne Campbell Sanitarium of which he was founder; died Jan. 23, aged 52.

Gamble, Paul Gaston ✱ Greenville, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1909; member of the American Urological Association; member of the House of Delegates of the American Medical Association in 1933; fellow of the American College of Surgeons; past president of the Mississippi State Medical Association, and in 1940 president of the Delta Medical Society; served as a member of the state board of health; on the staff of Kings Daughters Hospital where he died Feb. 8, aged 74, of coronary thrombosis.

Mufson, Samuel ✱ Biloxi, Miss.; born in Passaic, N. J., Sept. 6, 1898; Harvard Medical School, Boston, 1923; specialist certified by the American Board of Surgery; fellow of the American College of Surgeons; formerly assistant clinical professor of surgery at the New York University College of Medicine in New York City; veteran of World War II; served on the staffs of the Beth Israel and Bellevue hospitals in New York City; chief, surgical service, Veterans Administration Center, where he died Jan. 14, aged 58, of chronic lymphatic leukemia and pulmonary emphysema.

Dexter, Richard, Boston; Harvard Medical School, Boston, 1905; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; past-president of the Cleveland Academy of Medicine; veteran of World War I; served on the staff of the Massachusetts General Hospital; formerly practiced in Cleveland, where he was medical director of the East Ohio Gas Company and for many years he was on the staffs of the Lakeside and St. Alexis hospitals; died Jan. 19, aged 78.

Lewis, James Farrar ✱ Columbus, Miss.; Johns Hopkins University School of Medicine, Baltimore, 1935; certified by the National Board of Medical Examiners; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; veteran of World War II; served as special lecturer in bacteriology and pathology at the University of Mississippi School of Medicine, Jackson; head of the department of internal medicine, Doster Hospital and Clinic; died Feb. 15, aged 47.

McNulty, Lloyd Thomas, Potsdam, N. Y.; McGill University Faculty of Medicine, Montreal, Quebec, Canada, 1913; veteran of World War I; at one time prison physician at Dannemora; member of the advisory council of the Potsdam State Teachers College; formerly practiced in Norwood, where he was health officer; consulting physician on the staff of the St. Lawrence State Hospital, Ogdensburg; chief of staff of the Potsdam Hospital; died Jan. 7, aged 67, of coronary thrombosis.

Abraham, Bernat, New York City; Deutsche Universität Medizinische Fakultät, Prague, Czechoslovakia, 1921; died Jan. 14, aged 68, of coronary sclerosis.

Atherton, Herbert Raymond ✱ Chicago; Washington University School of Medicine, St. Louis, 1936; medical director of Swift & Company; member of the Industrial Medical Association; died Feb. 20, aged 47.

Baird, Ollie Josephine Prescott, Alexandria, Va.; Southern Homeopathic Medical College, Baltimore, 1906; died Feb. 4, aged 84, of a heart attack.

Coffman, Walter Roy, Portland, Ore.; Cooper Medical College, San Francisco, 1903; served on the staff of the Good Samaritan Hospital; died in the Emanuel Hospital Jan. 20, aged 78, of arteriosclerosis and pneumonia.

Conason, Arnold ✱ New York City; University of Michigan Medical School, Ann Arbor, 1941; veteran of World War II; formerly on the staff of the Veterans Administration Hospital; died Jan. 10, aged 40.

Davis, Franklin Clark, Macon, Ga.; Atlanta Medical College, 1893; died Jan. 13, aged 90, of coronary occlusion.

Dennen, Ralph Waite ✱ Tenants Harbor, Maine; Harvard Medical School, Boston, 1909; veteran of World War I; on the staff of the Knox Hospital in Rockland, where he died Jan. 15, aged 73, of acute heart failure.

Elliott, Herbert Temple, Austin, Texas; University of Louisville (Ky.) Medical Department, 1911; member of the Medical Society of the State of Pennsylvania; an associate member of the American Medical Association; died Dec. 5, aged 80.

Ellis, Thomas Henry, Clarendon, Texas; University of Pennsylvania Department of Medicine, Philadelphia, 1908; died Dec. 24, aged 78.

Fisher, Virgil Luther, Long Beach, Calif.; American Medical Missionary College, Battle Creek, Mich., and Chicago, 1906; an associate member of the American Medical Association; formerly medical director of the New England Sanitarium and Hospital in Melrose, Mass.; on the staffs of the Seaside Memorial and St. Marys Long Beach hospitals, and the Community Hospital where he died Jan. 13, aged 81, of nephrosclerosis.

Fisher, Irwin, New York City; University and Bellevue Hospital Medical College, New York City, 1920; died in the Cincinnati (Ohio) Sanitarium Dec. 18, aged 59.

Foster, John Van Valzah ✦ State College, Pa.; Reliance Medical College, Chicago, 1909; died Nov. 17, aged 77.

George, John Cecil, Asheville, N. C.; Miami Medical College, Cincinnati, 1906; veteran of World War I; served on the staff of the Veterans Administration Hospital in Oteen, N. C., until his retirement; died in the Swannanoa Division of the Veterans Administration Hospital in Oteen Jan. 21, aged 80, of acute leukemia.

Lesser, Louis, New York City; University and Bellevue Hospital Medical College, New York City, 1906; died Dec. 28, aged 80, of cerebral vascular accident, hypertension, and diabetes mellitus.

Lynk, Miles Vandahurst, Memphis, Tenn.; Meharry Medical College, Nashville, Tenn., 1891; died Dec. 29, aged 85, of Parkinson's disease.

McClellan, Robert Joseph ✦ Detroit; Detroit College of Medicine, 1909; served on the staff of the Grace Hospital; died in the Providence Hospital Jan. 20, aged 77.

McDowell, William Orrin ✦ Grundy Center, Iowa; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; past president of the Grundy County Medical Society; served on the city council, school board, and library board; on the staff of the Grundy County Memorial Hospital; died Dec. 27, aged 80, of coronary thrombosis.

Martin, Cicero Canada, Shawnee, Okla.; Medical College of Indiana, Indianapolis, 1896; died in the Veterans Administration Hospital, Oklahoma City, Dec. 15, aged 90, of myocardial infarction.

Martin, Thomas Monroe ✦ Plantersville, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1899; served on the staff of the Selma Baptist Hospital; died Jan. 20, aged 83, of heart disease.

Miller, John Thomas, Fort Worth, Texas; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1900; on the staff of St. Joseph Hospital; died Jan. 14, aged 90.

Miltimore, Dean, Nyack, N. Y.; Cornell University Medical College, New York City, 1902; an associate member of the American Medical Association; Nyack's first school physician; consulting physician at Nyack Hospital; died Dec. 21, aged 79, of arteriosclerotic heart disease.

Mitiguy, Edmund Reeves ✦ Milton, Mass.; University of Vermont College of Medicine, Burlington, 1929; member of the American Society of Anesthesiologists; on the staff of St. Elizabeths Hospital, Boston, where he died Dec. 29, aged 54, of coronary thrombosis.

Monk, Henry Lawrence ✦ Salisbury, N. C.; Medical College of Virginia, Richmond, 1899; surgeon for the Southern Railway; on the staff of the Rowan Memorial Hospital, where he died Jan. 4, aged 81, of lobar pneumonia.

Moore, William Alexander ✦ Rogers, Ark.; Colorado School of Medicine, Boulder, 1895; member of the staff of the Rogers Memorial Hospital; veteran of World War I; died in the Veterans Administration Hospital, Fayetteville, Jan. 19, aged 90, of cerebral hemorrhage.

Moss, Eli Bruce ✦ Junction, Texas; American College of Medicine and Surgery, Chicago, 1905; died Nov. 29, aged 73.

Mossmann, Irving E., Chicago; Chicago College of Medicine and Surgery, 1915; on the staffs of the Michael Reese, Edgewater, and American hospitals; died Feb. 5, aged 64.

Mouser, Justus Ambrose, Paulding, Ohio; Ohio State University College of Medicine, Columbus, 1916; died Jan. 9, aged 64, of uremia and cancer.

Munday, Cornelius Pearl, Sheveport, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1896; served on the medical staff of the U. S. Employees' Compensation Commission; died Nov. 28, aged 81, of a heart attack.

Munn, William Edwin, Kirksville, Mo.; Keokuk Medical College, College of Physicians and Surgeons, Keokuk, Iowa, 1905; died Dec. 28, aged 89.

Murray, Silas, Tulsa, Okla.; University of Tennessee Medical Department, Nashville, 1907; an associate member of the American Medical Association; formerly practiced in New York City, where he was on the staff of the Bellevue Hospital; died Jan. 12, aged 75, of heart disease.

Myer, Clifton Gustavus, Grand Junction, Colo.; University of Michigan Medical School, Ann Arbor, 1926; fellow of the American College of Radiodogy; specialist certified by the American Board of Radiology; veteran of World War II; associated with the Veterans Administration Hospital, where he was chief of the radiology service; died Dec. 29, aged 53.

Nester, Gerard Anthony ✦ St. Louis; St. Louis University School of Medicine, 1933; member of the American Academy of General Practice; instructor in internal medicine at St. Louis University School of Medicine; on the staffs of St. Mary's Group of Hospitals, St. Anthony's Hospital, and the Alexian Brothers Hospital, where he died Dec. 30, aged 47, of hypertensive cardiovascular disease.

Neuburger, William Edward, Maplewood, N. J.; Johns Hopkins University School of Medicine, Baltimore, 1955; interned at the Duke Hospital in Durham, N. C.; captain, in the medical corps of the U. S. Air Force, attached to the Western Air Research and Development Command; killed Dec. 21, aged 27, in the crash of an air force jet trainer plane near Dayton, Ohio.

Noble, Hubert Earl ✦ Clemons, Iowa; Keokuk (Ia.) Medical College, College of Physicians and Surgeons, 1905; served on the staffs of St. Thomas Mercy and Evangelical Deaconess hospitals in Marshalltown; died in State Center Dec. 6, aged 77, of cerebrovascular disease.

FOREIGN LETTERS

CANADA

Nutrition Programs in Nova Scotia.—Because of its lack of natural resources, the province of Nova Scotia is one of the less economically privileged areas of Canada. There is, therefore, reason to believe that certain nutritional problems are fairly widespread in this province. In 1948, the Federal Government and the Department of Public Health of Nova Scotia began a joint project for a model educational program in Cape Sable Island and based their program mainly on the schools, with extension to the whole community where necessary. In order to assess nutritional deficiencies and to study the progress made, two surveys were conducted, one in 1949 and another in 1954. Nutritional status was assessed by a study of food intake patterns, by medical and dental examinations, and by biochemical estimation of blood constituents. Dietary records were obtained for each person in the study group during a spring and an autumn week and scored in accordance with national standards. The first survey revealed that underweight in children and overweight in adult women were fairly common problems. It also showed a significant incidence of low hemoglobin values related to anemia; in fact, the incidence in 1949 was the highest encountered in Canada up to that time. Dietary inadequacy, as judged by food records, was common. Faulty oral hygiene was also common, dental caries and gingivitis being prevalent in all age groups. There was, however, no gross evidence of marked deficiency disease.

After the first survey, home visits were made to families in which individuals had shown nutritional deficiencies, and free treatment with iron and other drugs was provided for these families, who were also given advice on diet. The nutrition survey was described and discussed at public meetings with the entire population of the island. Throughout the course of the program, teachers and the general public were kept interested by booklets, displays, and talks. The 1954 survey showed that the program was paying dividends. Dietary inadequacy had been cut in half, and there was a lesser degree of malnutrition than in the first survey. Oral hygiene had also improved, as had the general findings in regard to anemia. The program is discussed in the *Canadian Bulletin on Nutrition* (vol. 4, no. 1, Jan., 1956). The authors believe that the results obtained in Cape Sable Island could be duplicated in other malnourished communities.

Retrolental Fibroplasia.—In spite of the wide publicity given to the finding that excessive oxygen administration to premature infants leads to retrolental fibroplasia, the disease has by no means been eliminated in North America. In the Jan. 15 issue of the *Canadian Medical Association Journal,* Banister and Locke state that sporadic cases are still occurring. They report a program for premature infants in which retrolental fibroplasia has been completely eliminated from a group of 126 premature infants weighing 4 lb. (1,825 Gm.) or less at birth. The infants were given oxygen only for resuscitation or because of (1) cyanosis due to arterial anoxemia, (2) respiratory difficulty, (3) pallor, or (4) lethargy after oxygen cessation or after feeding. Only in exceptional cases was a concentration of 40% oxygen exceeded. The concentration was checked repeatedly so as to avoid raising it above that level. An ophthalmoscopic examination was made weekly. Although oxygen administration was cut down drastically, no adverse effect was noted in the development of these infants. Oxygen concentrations were measured every two hours day and night with an oxygen analyzer. The authors state that public health authorities should require, as a prophylactic measure, analysis and recording of oxygen concentrations at minimum intervals in the same way that potentially toxic and lethal drugs must be charted. The reporting of cases of retrolental fibroplasia should be required by law, and the methods of oxygen control in the hospital where such a case occurs investigated.

Physiological Availability of Drugs in Tablets.—Chapman and co-workers of the Food and Drug Laboratories, Department of National Health and Welfare, Ottawa, have been studying the physiological availability of drugs in tablets and capsules. They point out that it is relatively simple to assay a preparation but much more difficult to determine whether the amount assayed is available to the patient. It is true that tests of in vitro disintegration have been reported in the literature, but their relationship to the length of time of in vivo disintegration is doubtful. Chapman began studies of a combined in vitro method to determine disintegration time and a urinary excretion technique to determine physiological availability. The disintegration mediums were simulated gastric or intestinal juices, with some slight rubbing in the apparatus being provided by a rubber or plastic disk. Preliminary studies with riboflavin or aminosalicylic acid suggested that the method was reliable. As a result of the preliminary work, the food and drug regulations now contain a clause that requires that all tablets, except enteric, enteric-coated, or timed-disintegrating tablets, disintegrate in not more than 60 minutes after ingestion.

The present study concerned 60 products claimed to be timed-disintegrating. Of these, 11 were studied for in vitro disintegration time. Only one brand of these tablets had an in vitro disintegration time of less than 60 minutes, and there was a great discrepancy in many cases between the disintegration times reported by the manufacturer and those found by the laboratory. It was concluded that in vitro disintegration may take place much more rapidly than in vivo disintegration.

The items in these letters are contributed by regular correspondents in the various foreign countries.

France and Canada.—Outside Canada, persons are apt to forget that there is a large and vigorous Canadian population of French ancestry and language. The great centers of medical instruction in French are Quebec and Montreal. Medical teaching in those centers was at first carried out mainly by graduates of universities in Great Britain and the United States. From 1900 onward a growing exchange of ideas and teaching between Canada and France developed. A high proportion of French-Canadian medical specialists had done postgraduate study in Paris or other French centers; this continued until World War II cut the communication. At that time, the younger generation turned to the United States for training, and there is now a large section of the French-Canadian medical population that has received graduate training there. Because the French Canadian wishes to conserve his individuality, his language, and his manner of thinking, many are seeking to reestablish the bonds with France. Since World War II the difficulty has been that the increasingly strict demands of the Royal College of Physicians and Surgeons of Canada for certification and fellowship have militated against study abroad in unknown centers in an unorganized manner. Last fall the efforts of physicians on both sides of the Atlantic culminated in an action by the French government that has made it possible for a number of physicians or senior medical students from Canada to work as "foreign residents" in state-controlled hospitals in Paris. Financial help will be given, and the studies will be recognized with the granting of a diploma that will be valid in Canada. In this way it is hoped that many of the young generation of French-Canadian physicians will acquire a double culture, that of the United States and that of France.

Frenquel in Schizophrenia.—Whereas pipradrol hydrochloride is known to accentuate hallucinations in psychoses, its gamma isomer, azacyclonal hydrochloride (Frenquel), has the opposite action and is known to oppose the psychotic effects of lysergic acid diethylamide (LSD-25) and mescaline. It has, therefore, been suggested that this drug may be of value in reducing the hallucinations of chronic schizophrenia. Forster and Henderson (*Canadian Medical Association Journal*, Jan. 15, 1957) investigated the effect of an oral dosage of up to 400 mg. daily on 18 chronic schizophrenics, all of whom had constant and acute hallucinations. Although the drug was given for an average of 49 days, no change in the hallucinations or other psychiatric symptoms was noted. The only biochemical change observed was a progressive rise in the nonprotein nitrogen level in the blood. The authors comment that, whereas Frenquel may be of value in treating acute schizophrenia or delirium tremens in cases in which there may be a common mechanism between these natural phenomena and the model psychoses produced by LSD-25 and mescaline, the situation is not comparable in chronic schizophrenia.

Phenmetrazine in Treatment of Obesity.—Dr. Martel, of Laval University, Quebec, has published the first Canadian study of the use of phenmetrazine hydrochloride in the treatment of obesity. This drug has been extensively used in Germany and Austria, and the present studies confirm that it is a valuable auxiliary in treatment of overweight. It is an appetite depressant, with a rapid and prolonged action. The dosage used was a 125-mg. tablet at 10 a. m. and at 4 p. m. This restrains the midmorning and the evening hunger that most obese patients feel. Patients manifested no toxic effects. In contrast to amphetamine, with phenmetrazine there was no increase in pulse rate, palpitations, anxiety, or insomnia. The euphoric action was less marked than with amphetamine, but the drug had a certain effect on mood. Children in particular tolerated it well.

DENMARK

Venereal Disease.—According to *Nordisk medicin* for Dec. 6, the public health authorities in the different Scandinavian countries are confronted by the paradox that, while the modern treatment of gonorrhea with penicillin is promptly effective, with a cure rate of nearly 100%, the frequency of this disease seems to rise rather than to fall. Dr. B. Heilesen points out that in Denmark the incidence of gonorrhea rose from 16.2 per 10,000 inhabitants in 1952 to 18.6 in 1954. In this respect the situation is particularly bad in Copenhagen where there was a rise from 43.5 in 1951 to 54.4 in 1954. Heilesen has treated gonorrhea with several antibiotics other than penicillin, but he concludes that penicillin is the most effective. Streptomycin and dihydrostreptomycin have the advantage over certain other antibiotics that in the doses given they do not mask a simultaneous infection with syphilis. However, these antibiotics are likely to sensitize the patient, and there is also the risk of producing resistant strains of Neisseria gonorrhoeae. The law requires finding and treating the person who was the source of infection, but in practice a patient is usually loath to reveal the identity of the person infecting him. In a series of 241 men in 1954, Heilesen found that only 115 would give any information at all on the subject and that only 48 (20%) gave the name and address of the person who was the source of infection. Secrecy on this score is natural, for such revelations may lead the patient into legal trouble. The physician consulted is supposed, according to the law, to pass on the information he obtains from the patient to the police, but he does not always do so. Another factor interfering with the early discovery of the person who was the source of infection is the time taken in collecting the necessary information, and this may be of great importance in the case of asymptomatic female carriers.

Vejlefjord Sanatorium.—Nearly a century ago a young Dane, Dr. C. Saugman, developed pulmonary tuberculosis. He had aspired to be a surgeon but then was obliged to undergo sanatorium treatment, under the care of Hermann Brehmer, the founder of sanatorium treatment in Germany. After serving as Brehmer's assistant for some time, Saugman returned to Denmark and began in 1892 to campaign for the creation of a sanatorium in his own country. Vejlefjord Sana-

torium, with 96 beds, ultimately came into being in 1900. The funds were largely provided by physicians. The fees charged were modest, and some beds were reserved for deserving patients who could not pay. Saugman was the first in the Scandinavian countries to introduce artificial pneumothorax, and he did much to render it comparatively safe by the introduction of a manometer for gauging the intrathoracic pressure. In spite of this precaution he witnessed sudden death under this treatment in more than one patient. By 1923, when Saugman died, Vejlefjord Sanatorium had become the leading sanatorium in Scandinavia. With the decline in the frequency of pulmonary tuberculosis and the increased assumption of the cost of its treatment by state and local governmental bodies, the need for a semiprivate tuberculosis sanatorium has diminished. On Jan. 1, 1957, Vejlefjord Sanatorium began to undertake the care of patients suffering from nervous ailments instead of tuberculosis.

With a Danish Red Cross Ambulance in Hungary.—In *Ugeskrift for læger* for Jan. 17, Dr. Tyge Jacobsen described the ambulance team that left for Hungary last fall. The team included 13 physicians, 50 nurses, and various technicians. The 60 motor vehicles included 24 3-ton trucks. Tentative contacts were made in Budapest in a school converted into an emergency hospital, and it was not until later on that a more permanent footing was secured in a university surgical hospital. The first impression made by Budapest was one of terrible disorder, with many hospitals blasted into ruins and the local Red Cross disorganized by changes in its leadership. All the hospital physicians were overworked, and the hospitals still left standing were curiously empty. One reason for this emptiness seemed to be the fear of the wounded that, if they remained in a hospital, they might be seized and deported. This feeling might also partly explain why so much hospital equipment had been removed, presumably for the service of the wounded who preferred to be treated at home instead of in a hospital or some other public building. This shortage was to a certain extent made good by the supplies brought by the Danish ambulance team, whose leader had to insist on their control as an integral unit. Jacobsen is most appreciative of the cooperative spirit in which the members of the Hungarian Red Cross supported their colleagues from Denmark. The 200-bed hospital the Danish team succeeded in organizing was the first Red Cross hospital from abroad to get to work in Budapest.

INDIA

Chlorophenothane-Resistant Mosquitoes.—P. K. Dikshit and co-workers (*Ind. J. Malariology* **10**:4 [Dec.] 1956) stated that the phenomenon of chlorophenothane (DDT) resistance is closely associated with the acceleration of certain metabolic reactions. Flies resistant to chlorophenothane have thus been shown to contain greater amounts of cytochrome oxidase. The authors believed that if the respiratory enzymes could show an increase there was also a possibility of the energy-furnishing reactions being increased in the resistant groups. This would result in the increased formation and accumulation of certain intermediate metabolites. One such compound is citric acid, resulting from the condensation of its pyruvate and oxaloacetate under the influence of specific enzymes. Estimations of citric acid were therefore carried out with a view to determining if any changes occurred in chlorophenothane-resistant mosquitoes. Earlier work had shown that the high resistance exhibited by the adult mosquitoes was also shown by their larvae, which at no time had been subjected to the action of chlorophenothane, only the adults having been exposed to the insecticide in each successive generation. The concentration of chlorophenothane that caused 100% mortality among larvae of a normal strain had little or no effect on larvae of a resistant strain under identical conditions. Resistant insects of 50th and 52nd generations were selected. Thirty specimens each of adults, pupae, and larvae of both strains were used for the determination of citric acid. In the three forms of the resistant strain, the average content of citric acid per specimen was respectively 45, 26, and 52% more than at the corresponding stage in the nonresistant strain. Even the ova of the resistant strain were found to contain a little more citric acid.

Complement Levels Following Liver Injury.—Rangam and Chandra (*J. Indian M. A.* **28**:2 [Jan. 16] 1957) showed in an earlier investigation that in guinea pigs maintained on a diet poor in methionine and cystine the serum complement values fell. The present study aimed at ascertaining serum complement values in 16 guinea pigs subjected to hepatic injury by carbon tetrachloride (2 control animals were used) and 65 human beings suffering from hepatic disease (64 normal controls were used). The extent of the hepatic injury was determined by serum protein estimations, cephalin-cholesterol flocculation tests, icteric indexes, van den Bergh's tests, and alkaline phosphatase estimations. The livers of all the guinea pigs were also studied histologically post mortem. Complement estimations and liver-function tests were done simultaneously every week. Serum complement values in human beings were studied, and the same tests as in guinea pigs were used to estimate hepatic injury. Patients with hepatic disease showed lower complement values as compared with those of normal persons. A progressive fall in complement values with progressive liver injury was observed in the guinea pigs. The fall in complement values corresponded with the inability of the liver to synthesize proteins. The liver may thus be the site of production of complement.

Chronic Splenomegaly.—R. N. Chaudhari (*J. Indian M. A.* **28**:2 [Jan. 16] 1957) studied a series of 134 patients with splenomegalies of obscure origin. Recurrent gastrointestinal hemorrhages and other signs of portal hypertension were present in 9%. These were mostly townspeople with no history of malaria. Most of the other patients, however, were in a different category. They came from rural areas known to be

malarious, had suffered from malaria, and were having irregular bouts of fever at the time of admission, although blood smears were negative for malaria parasites in all except two patients. The socioeconomic status of this group was low, and many of them showed signs of malnutrition. In addition to the spleen, the liver was also enlarged in most of them. Antimalarial treatment resulted in subsidence of fever and regression in the size of the spleen in 30% of the series. The splenomegaly in these patients was undoubtedly due to chronic malaria. Field experiments in hyperendemic areas have also shown that with antimalarial measures the enlarged spleens of patients receded completely or greatly decreased in size, though the response was naturally slow. The remaining 70% of the series also started with malaria and showed massive spleens, anemia, fibrotic changes in the liver, and marked dilatation and tortuosity of splenic and portal veins, with signs of portal hypertension in some. These patients may be regarded as in an advanced stage of the condition seen in the other 30%, but they did not respond to antimalarial treatment. Malarial and dietary deficiency are the two major causes of chronic splenomegaly and hepatitis in Bengal, where these patients were studied. Under favorable circumstances the splenomegaly and hepatitis subside, but in some patients they progress. The ultimate prognosis for these patients is determined by the condition of the liver.

Patent and Proprietary Medicines.—Labels of patent and proprietary medicines must now display in the prescribed form and in a manner readily intelligible to the medical profession the true formula and the list of ingredients contained in them. The Central Drugs Laboratory has accordingly stopped the registration of patent and proprietary medicines with undisclosed formulas. Registration certificates in respect to patent and proprietary medicines with undisclosed formulas issued prior to the enactment of the new law have become inoperative. Manufacturers and importers have accordingly been advised that the labels of patent and proprietary medicines should be changed to comply with the provisions of the law.

Cancer Control Program.—A national cancer control program is being started in 10 states. Elsewhere, in Bombay, Madras, Calcutta, and Hyderabad, some of the cancer research institutes and hospitals may be taken over by the Union Government. In other cases, large grants may be given for their development. In each of the 10 states a 50-bed cancer ward will be established in a large teaching hospital.

ISRAEL

New Medical Journal.—In July the Research Council of Israel published the first number of *Experimental Medicine*. Its articles represent a good survey of experimental medicine in Israel. There is, for example, a report by Grossowicz and co-workers, who found a marked rise in the level of serum vitamin B_{12} in dogs with acute liver damage induced by chloroform. After intragastric administration of chloroform, the rise in level of serum vitamin B_{12} reached a maximum of four times the pretreatment level in 24 to 48 hours. After intraportal injection, a maximum of 18 times the preinjection level was reached in two to four hours. The serum vitamin B_{12} values returned to the base line within four days and 48 hours, respectively. The rise in the level of serum vitamin B_{12} appears to be due to release of the stored vitamin from injured and disintegrating liver cells.

In the same issue, A. Rosin reported on a thiourea-induced myxomatous tumor in a rat. Such tumors have successfully been transplanted to other rats. In another article, J. Taub found a factor lytic for Leishmania in normal human serum. The same factor could be obtained from the blood of the umbilical cord. Serums of children up to the age of 5½ years are seldom lytic for Leishmania infantum. The serums of most children over 6 years of age show a return of the lytic property. The lytic factor could be identified as a euglobulin. Determination of the presence or absence of lytic properties in human serum is an aid to studying the epidemiology of infantile leishmaniasis.

Enteric Viruses in Children.—H. Bernkopf and coworkers reported on the occurrence of enteric viruses in children of a suburban community near Jerusalem at the 11th annual meeting of the Israel Microbiological Society in March, 1956. The findings reported were part of a study to examine, at different seasons of the year, for the presence of enteric viruses in children of a recently established community of immigrants. At the beginning of June, 1955, blood was obtained from 165 children for determination of poliomyelitis antibodies. At the same time and later at three-month intervals, stool samples were collected for examination for enteric viruses. No cases of poliomyelitis, aseptic meningitis, epidemic pleurodynia, or herpangina occurred in the community in 1955. Of the stool samples from 137 children, those of 78 were positive. Thus 57% of the children examined excreted virus in their stools. In a previous study in Israel, 15.3% excretors of Coxsackie virus were found among 98 normal children. Of the agents isolated, 62 virus strains were pathogenic for suckling but not for mature mice. They probably belonged to the Coxsackie group of viruses. Fifty of these strains also showed a cytopathogenic effect in tissue culture. Nineteen strains could not be isolated directly from the stools and were obtained after preliminary passage through tissue culture only. One cytopathogenic agent was a type 2 poliomyelitis virus, and 12 other cytopathogenic agents have not yet been classified. Forty-seven agents were isolated from children who were not known to have any symptoms at the time the stool samples were collected. Thirty-one agents were obtained from children who had an upper respiratory or intestinal infection during the period of investigation. In the latter group, 84% of the children were under 3 years of age, while in the group without any symptoms but from which viruses were isolated, 83% were over 3 years old.

Poliomyelitis Vaccination.—Of all countries, Israel was one of the worst hit by poliomyelitis. Each year the disease struck down between 450 and 800 children of

a population of about 1.5 million. The most susceptible age group was that from 6 to 12 months. After this, the incidence tapered off until the age of 3. About 80% of all cases occurred before the child was 3, while the 4-year-old group had only 8% of all cases. Almost all children in Israel between the ages of 6 months and 3 years had been vaccinated against poliomyelitis by January, 1957, with a locally produced, Salk-type vaccine. The vaccinated group included about 120,000 children. It is hoped, however, that with an increase in production of vaccine the campaign can be extended to other age groups. The immunization program was carried out and financed by the Ministry of Health, assisted by several voluntary health agencies, and is free of charge. Some 900 vaccination stations were set up in towns and larger villages, while smaller communities were visited by mobile teams. The vaccine was produced in the government laboratory in Jaffa. The vaccine is subject to the safety tests prescribed by the U. S. Public Health Service and has the same safety level as that produced in the United States. In addition to the local tests, samples of the vaccine have been sent for testing to the Public Health Service of the United States and of Denmark. There were 5,300 cases of poliomyelitis between 1950 and 1955, of which 800 were fatal and 1,800 were of the paralytic type.

NETHERLANDS

Effects of Tonsillectomy and Adenoidectomy.—Cramer (*Tijdschr. sociale geneesk.* **34**:677, 1956) analyzed the results of tonsillectomy and adenoidectomy in a series of 1,308 children 5 and 6 years old. In the group on which the operation had been performed for a recurrent tonsillitis, 93% showed a definite improvement; 61% of those with a recurrent rhinitis or otitis improved after these operations; but 51% of those on whom a tonsillectomy or adenoidectomy was performed for breathing through the mouth, poor enunciation, or nocturnal enuresis showed no improvement. These minor operations may have a harmful psychic effect. This was especially noticeable in children with repeated infections (24%). It is suggested that the recurrent infections might have undermined their general resistance. None of the 15 healthy children, who had been operated on only because a brother or sister had to go to the hospital, showed any harmful effect. In general, 38% of the children operated on showed no improvement and 19% showed harmful effects, mostly psychic. Of the children investigated, 61% of those who lived in town and 32% of those who lived in the country were operated on. It was thought probable that this difference resulted from the presence of more otologists in town than in the country.

Nederlandsch Tijdschrift voor Geneeskunde.—In January the *Nederlandsch tijdschrift voor geneeskunde* (the official organ of the Netherlands Medical Association) celebrated its 100th anniversary. The first issue of the 101st volume reviewed important articles that appeared in the journal in the first years of its existence. It contains an article by an ophthalmologist, F. C. Donders, in which for the first time the occurrence of oculomotor paralyses after diphtheria was described. Another author described his attempts to improve the general condition of a patient with sprue and diabetes by giving him orally an extract of the pancreas of a calf. The author was surprised to notice alleviation of the sprue but not of the diabetes. Another author was astonished at the rapid and harmless action of a subcutaneous injection with atropine. A century ago there was much discussion about the usefulness of sanitary sewers and about the value of smallpox vaccination. A letter from Japan told of the work of the Netherlands' naval physicians who had been invited by the Japanese government to help in the education of Japanese medical students.

Medical Care for the Hopeless Case.—In an article in the *Nederlandsch tijdschrift voor geneeskunde* (**100**: 2601, 1956), H. R. Bax says that with the great increases in medical knowledge physicians pay more attention to patients who present a difficult diagnostic problem or for whom modern treatment may be of great benefit than to the hopeless case. From a scientific point of view this is easily understood, but it must not be forgotten that those are the very patients who may have a long illness ahead and will continuously need sympathetic attention. One question that arises is whether the patient is to be told about his true condition. The author believes he should not be told, because nobody can bear this knowledge. Whether we are healthy or not, we tend to be afraid of death. Even when we have a philosophical view of life or belong to a church, we remain afraid of it and expel all thoughts of it from our mind. Especially when a patient with some fatal disease is still fairly well, the knowledge of his nearing end will have a bad influence not only on his morale but also on the course of his disease. This implies not that the physician must always radiate optimism but rather that he should always hold out a modicum of hope. Under these circumstances some form of treatment should always be given, even when the physician does not expect any benefit to result from it. He should even change the treatment now and then and give the impression that he is constantly searching for the best way to cure the patient. It may, however, be difficult sometimes for the physician to keep the confidence of his patient.

Apart from the fact that it is often wise to inform a relative who lives at some distance, most patients will guess the truth. Fortunately, when the end is imminent, the body and soul will accept death without fear or even long for it. All this implies that the attitude of the physician toward these patients is characterized by a certain amount of deceit. It is important to see how the patient as well as his family always eagerly accepts the optimistic point of view of the physician. After the death of the patient, the family should not reproach the physician for his optimism but rather should thank him for making the illness more bearable for the patient.

LAW DEPARTMENT

MEDICOLEGAL ABSTRACTS

Malpractice: Defective Cautery Instrument and "Res Ipsa Loquitur."—This was an action for damages for burns due to the alleged malpractice of the defendant physician. From a judgment in favor of the physician, the plaintiff appealed to the Supreme Court of Florida.

While the defendant physician was removing moles from the defendant's face with a cautery instrument, described as an electrically heated knife, the blade suddenly became disengaged and dropped to the plaintiff's neck, causing burns thereon. The plaintiff contended, therefore, that the use of the instrument was in the exclusive control of the defendant, that the defendant, by adequate inspection, knew or should have known that the instrument was dangerous and defective, and that therefore the defendant was guilty of negligence in using a defective instrument during a surgical operation. The defendant, on the other hand, contended that the cautery instrument was factory assembled, that any defect therein was mechanical and not within the control of the defendant, and, further, that the broken tip was an integral part of the instrument, was not replaceable, and was not subject to being disassembled for inspection. He testified that the instrument was tested prior to use by preheating and touching against absorbent cotton and had been used on several occasions since he had acquired it four years before.

The Supreme Court pointed out that there were no genuine issues of specific negligence as to method or manner of treatment involved in this case. The real question was whether the doctrine of *res ipsa loquitur* is applicable, upon the breaking of the instrument, to make a prima facie case of negligence against the doctor. In cases involving charges of malpractice against a professional man, continued the court, negligence will not be presumed; it must be proved. The plaintiff did not specify in what manner the defendant was negligent, and a general averment of negligence, without specific negligence as to method or manner of treatment, is not a prima facie case of negligence against a professional person. He cannot be convicted for pure accident or other results incident to his treatment if he was exercising the best approved methods known to medical science with care and diligence. Furthermore, said the court, the doctrine of *res ipsa loquitur* does not apply in a malpractice case in which negligence is charged in diagnosis or treatment. When an instrument is used, if the requisite control by the doctor is lacking, then, in absence of a showing of specific negligence, there is no negligence under *res ipsa loquitur* alone. This reasoning is even more logical, said the court, when the instrument is not intended for internal inspection for possible defects within it. In the absence of specific averments of negligence, therefore, the Supreme Court affirmed the judgment in favor of the defendant physician. *Hines v. Fox, 89 So. (2d) 13 (Fla., July, 1956).*

MEDICAL FILM REVIEWS

Incomplete Cholecystectomy: 16 mm., color, sound, showing time 14 minutes. Prepared in 1956 by and procurable on loan from Philip Thorek, M.D., 25 E. Washington St., Chicago.

This film portrays the removal of the infundibulum of an incompletely removed gallbladder. It is timely because incomplete cholecystectomy occurs more frequently than is generally realized and is one of the causes of unsatisfactory results following cholecystectomy. Surgical technique in the operation shown is excellent. The operating surgeon emphasizes the importance of an adequate incision in gallbladder surgery. The anatomic landmarks around the gallbladder pedicle are shown first in attractive color illustrations and are then pointed out in the actual operation. The small gallbladder remnant is successfully removed. The importance of leaving a portion of the cystic duct to protect the common bile duct is stressed. Some may question that the original operation was indicated in this case, and even the operation depicted in this film, because no history is given and the cholecystogram fails to demonstrate stones. From a motion picture technical standpoint, the film is good. The photography and narration are excellent, although at times the lettering is outside the picture frame. The beginning surgical scenes are not especially good because of too low camera angle and too much interference from the operating surgeons. These scenes could be improved by further editing. The narration runs beyond the last scene. There is no end title or proper finish. The anatomy shown and the surgical technique employed serve to make this a valuable teaching film. It is recommended for surgeons who are interested in this procedure.

The Human Body: Circulatory System: 16 mm., color, sound, showing time 13 minutes. Educational Collaborator: George K. Fenn, M.D., Chicago. Produced in 1956 by and procurable on purchase ($125) from Coronet Films, Coronet Building, Chicago 1.

This film is a presentation of the functions and processes of the entire circulatory system. The pattern of blood flow, the various organs of the circulatory system (heart, lungs, kidneys), and the functions of and the interrelationships among these organs are shown. As a historical background, the film briefly discusses the contributions of Vesalius and Harvey. Live action (including scenes of a living dog's heart), drawings, animation, close-ups, cinefluorography, and overprints are used to emphasize the concepts and ideas. The film is scientifically accurate. However, there are some facts in the summary that are not mentioned in the beginning of the film. The photography, particularly of the dog's heart, and the microscopy are above average. The selection of material and the language used are excellent. However, in the opinion of the reviewers, the animation will require further explanation by the person showing the film. This film is recommended for junior and senior high school students.

MEDICAL LITERATURE ABSTRACTS

INTERNAL MEDICINE

Observations on Course of the Disease in Patients with Recent Myocardial Infarction. F. Kubicek. Wien. med. Wchnschr. **107**:48-54 (Jan. 12) 1957 (In German) [Vienna].

Of 96 patients (80 men whose average age was 58 years and 16 women whose average age was 63.5) with myocardial infarction who were admitted to hospital, 5 were moribund on admission. Of the remaining 91, the infarction had occurred not longer than 2 weeks before admission in 53 patients, between 2 and 4 weeks before in 28, and more than 4 weeks before in 10. Forty-one patients had infarction of the anterior wall, 47 infarction of the posterior wall, 2 lateral infarction, 3 anteroposterior infarction, 2 multiple infarction, and 1 atrial infarction. The symptomatology, the blood chemistry, and the roentgenograms showed that healing of the infarct had not yet occurred in any of the 91 patients. Of the 53 patients, 37 had the acute syndrome with resulting reduction of the minute volume, the cardiac output, and the peripheral blood pressure; diminution of the volume of circulating blood; and ischemia of the entire impaired myocardium. Shock and circulatory collapse were the predominant features in 13 of the 37 patients; 4 of the 13 died. Twenty-seven patients had a gallop rhythm; 9 of these died in the hospital and 3 died at home or in another hospital. Pericardial friction sounds were observed in 4 of the 41 patients with infarction of the anterior wall and in 4 of the 47 with infarction of the posterior wall; 2 of the latter died. Hemodynamic insufficiency occurred as manifest decompensation in 7 patients and as latent decompensation in 10; it was either present primarily or developed in the course of the observation period. Pulmonary edema was observed on admission in 1 patient and at the time of death in 2 others. Thromboembolic complications were observed in 15 patients.

Eighteen patients (13 men and 5 women) of the 96 died, giving a total case fatality rate of 18.75%. Six of the 18 patients had received anticoagulant therapy. The prognosis of posterior wall infarction is less favorable than that of anterior wall infarction. The initial prognosis did not prove reliable in 20 patients. Ten who were considered good risks died, and 10 who were considered poor risks survived. Fifty-nine patients were considered initially good risks and remained good risks; 17 were considered initially poor risks and their course confirmed this prognosis. Indications for anticoagulant therapy cannot, therefore, be based on the initial prognosis. Administration of anticoagulants and oxygen represent definite progress in the treatment of myocardial infarction. The sedimentation rate and Weltmann's serum coagulation test are still the most suitable methods for the evaluation of the clinical course of patients with recent myocardial infarction.

The Drug Treatment of Nonhospitalized Patients with Tuberculosis. A. B. Robins, H. Abeles, A. D. Chaves and others. Am. Rev. Tuberc. **75**:41-52 (Jan.) 1957 [New York].

Of 1,646 patients with active pulmonary tuberculosis who attended the chest clinics of the New York City Department of Health and in whom antimicrobic therapy was started between July, 1953, and July, 1954, 1,146 (70%) were treated for at least 4 months. Seventy-four per cent of the patients received combined treatment with isoniazid and aminosalicylic acid, 2% combined treatment with isoniazid and streptomycin, and 1% combined treatment with isoniazid, aminosalicylic acid, and streptomycin. The remaining 23% were given combinations of the 3 regimens used in the other patients. Most of those who did not complete the 4-month period were admitted to hospital or discontinued regular clinic attendance. Reversal of infectiousness as determined by sputum culture occurred 12 months after the institution of therapy in 56% of the patients with sputum initially positive for Mycobacterium tuberculosis. The sputum of only 3% of the patients with sputum initially negative for Myco. tuberculosis tested negative instead of positive at this time. Reversal of infectiousness occurred in 76% of the 277 patients with tubercle bacilli in the sputum who had never received drug treatment previously and in 44% of those who had received antimicrobic drugs before they were included in the program. Roentgenographic improvement was noted 12 months after the institution of chemotherapy in 47% of the 1,146 patients, worsening in 12%, and no change in 41%. The disease in 400 (35%) of the 1,146 patients was arrested according to the criteria of the National Tuberculosis Association. Localized areas of rarefaction were observed in the chest roentgenograms of an additional 4% of patients with consistently negative bacteriological findings, and their disease was classified as "arrested with cavitation." Treatment at the chest clinic was most successful in patients wih minimal involvement of recent origin who had not been treated previously with antimicrobic drugs.

Three hundred fifty-one patients with pulmonary tuberculosis completed a minimum of 18 months of chemotherapy or reached the stage of maximal benefit before that time had elapsed. The study of the

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The place of publication of the periodicals appears in brackets preceding each abstract.

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findings in this group of patients indicated that the improvement noted in the first year of treatment was persistent and was present in an even greater proportion of patients at the end of 24 months. Tubercle bacilli could no longer be recovered on culture in 58% of the patients in whose sputum they were found at the beginning of the treatment. The proportion of patients whose disease was classified as arrested rose to 48% and that of those with disease "arrested with cavitation" to 12% after an additional year of observation. More favorable responses were again noted in patients with less advanced, more recent, and previously untreated disease. By including in the total number of patients whose conditions can be considered stable and noninfectious 2 years after the institution of the treatment, those who lapsed from attendance of the chest clinic while their disease was still active, and those hospitalized for tuberculosis after an adequate period of chemotherapy in the clinic, the disease could be classified as arrested in 37% of the patients given drugs for at least 4 months. By applying similar criteria, the sputum in 49% could be considered to have become noninfectious during the 2-year period. There is no evidence that the provision of drugs to unhospitalized patients through the chest clinics has materially influenced acceptance of hospitalization or contributed to the spread of tubercle bacilli resistant to antimicrobic drugs in the community.

Hepatolenticular Degeneration (Wilson's Disease) as a Form of Idiopathic Cirrhosis. T. C. Chalmers, F. L. Iber and L. L. Uzman. New England J. Med. **256**:235-242 (Feb. 7) 1957 [Boston].

The authors report 5 cases of cirrhosis of the liver associated with hepatolenticular degeneration without significant neurological findings of the disease in adolescent siblings in 2 families: 3 sisters aged 15, 12, and 17 at the onset, and 1 sister and 1 brother aged 5 and 11 at the onset. The parents of the 3 sisters and their 2 surviving sisters and 1 brother were normal, as were the parents of the 2 other patients. All 5 patients had severe liver disease at an early age. The 3 sisters died without manifesting any neurological abnormalities. The presence of Kayser-Fleischer rings was established by slit-lamp examination in 1 of the 3 sisters, whose urine contained 1.5 mg. of copper (over 10 times the normal) and 830 mg. of alpha-amino nitrogen (about twice the normal value). Autopsy performed on 2 of the 3 sisters revealed marked cirrhosis. The girl in the second family had intermittent hallucinations, a stiffened facial expression, tremor of the tongue, and adiadochokinesia in the left hand. These neurological symptoms appeared 7 years after her first episode of jaundice and hepatomegaly. Her mental status improved after 3 courses of dimercaprol therapy. Her brother did not have any neurological signs or symptoms. Both siblings had Kayser-Fleischer rings, and liver biopsy revealed cirrhosis in both and an increased copper content of the liver tissue in the boy. The output of urinary alpha-amino nitrogen and copper was increased in the girl, and aminoaciduria was observed in the boy.

The appearance of symptoms and signs of liver disease before the onset of neurological abnormalities in hepatolenticular degeneration has been reported in the past. It is suggested that this "abdominal" form of progressive lenticular degeneration may be a relatively common and frequently unrecognized cause of idiopathic cirrhosis in children and young adults. The biochemical abnormalities of hepatolenticular degeneration, such as aminoaciduria, peptiduria, hypouricemia, increased tissue copper, cupruria, and decreased serum ceruloplasmin content help to establish the diagnosis.

Metabolic Changes in the Pathogenesis of Diabetes. L. Travie. Diabète **4**:249-255 (Nov.-Dec.) 1956 (In French) [Paris].

A study of the frequency of obesity among 1,500 patients with diabetes showed that in 83% diabetes was preceded by obesity and that the body weight increased just before the patient contracted diabetes in the remaining 17%. Hypercholesteremia was found in 72% of 494 diabetic patients and in 70% of a group of obese persons without diabetes. In obese persons hyperglycemia is often preceded by hypercholesteremia. Hyperuricemia was found in 70% of 176 diabetic patients and in the same proportion of a group of obese persons. Hypercholesteremia and hyperuricemia were found in 64% of both diabetic and obese patients; 14% showed either one or the other; and only 5% had normal blood uric acid and cholesterol levels. The author believes that diabetes is the result of a functional imbalance caused by an irregular diet. Metabolic changes can be discovered by studying the cholesterol and uric acid levels, since these tend to increase long before hyperglycemia sets in. Normal metabolism is reestablished in diabetic patients by bringing the blood sugar, uric acid, and cholesterol levels and the glucose tolerance back to normal. The blood pressure and the electrocardiogram should also be normalized if hypertension is present.

Considerations of the Present-Day Treatment of Typhoid. P. Palmisano. Riforma med. **71**:13-16 (Jan. 5) 1957 (In Italian) [Naples].

The author reports on the results obtained in 3 groups of patients with typhoid treated with vaccine (64 patients), chloramphenicol (48), and chloramphenicol combined with vaccine (54). The average length of hospitalization for the patients in the first group was 33 days; 4 patients had a relapse, and 10 patients died. Results obtained in the patients of the second group were good. The fever disappeared in some patients after from 2 to 6 days of treatment; toxicity regressed markedly after 2 or 3 days, but relapses were very frequent. The average length of hospitalization was 24 days. Two patients died, side-effects were observed in a few patients, and 2 children had diarrhea. The best results were obtained in the patients in the third group. They were from 15 to 35 years of age, except for 2 children aged 2 and 3. Administration of chloramphenicol was continued even after clinical recovery. The average length of hospitalization was 21 days. Two patients had a relapse, and 1 patient died.

Use of Probenecid During Treatment with Aminosalicylic Acid. J. A. De Fockert. Nederl. tijdschr. geneesk. **101**:112-114 (Jan. 12) 1957 (In Dutch) [Haarlem, Netherlands].

The author gave probenecid by mouth to 10 patients who also received aminosalicylic acid by mouth and later to 5 patients who received the latter intravenously. He found that the concentration of aminosalicylic acid in the blood was from 2 to 4 times higher with than without the use of probenecid and that it was held at an effective level for 3 to 4 hours in the patients receiving the aminosalicylic acid orally and up to 6 hours in those receiving the drug intravenously. On the basis of his own experience with probenecid and published reports, the author now uses probenecid with the oral as well as with the intravenous administration of aminosalicylic acid. He gives from 1.5 to 2 Gm. of probenecid daily by mouth divided into 6 or 8 doses of 0.25 Gm. With this dosage secondary effects such as gastrointestinal disturbances are largely prevented. Having used probenecid therapy in this form in about 200 patients, the author concludes that the use of probenecid is indicated whenever aminosalicylic acid is to be given in the treatment of tuberculosis.

The Use of I^{131}-Labeled Albumin in the Diagnosis of Pancreatic Disease. R. J. Freeark, D. D. Kozoll and K. A. Meyer. Surgery **41**:268-275 (Feb.) 1957 [St. Louis].

The isotope-labeled protein digestion test, described first by Lavik, Chinn, and co-workers, was performed on 6 patients with pancreatic pseudocyst, 6 patients with acute pancreatitis without evidence of pancreatic insufficiency, 4 patients with carcinoma of the body and the tail of the pancreas, 9 patients with proved pancreatic insufficiency, 30 patients with obstructive jaundice, and 40 normal persons who served as controls. Those tested were given a meal of pure gelatin to which 100 μc of I^{131}-labeled human serum albumin was added, with 200 cc. of distilled water as a diluent and a small amount of chocolate flavor for patability. The meal was given after a 12-hour fast and a 72-hour period of thyroid blockage with strong iodine (Lugol's) solution. Normal persons showed a peak concentration of the isotope from 10 to 22% in the blood at 2 or 3 hours, with a gradual return to the isotope-free state. The 9 patients with pancreatic insufficiency showed much flatter curves, with peak levels above 5% in only 1 patient and the remainder of isotope concentrations generally below 4%. Six of the 8 patients with obstructive jaundice caused by carcinoma of the head of the pancreas showed flat curves, indicating simultaneous pancreatic and common duct obstruction, strongly suggestive of carcinoma of the pancreas. Significant alterations from findings in the control persons were not observed in the 16 patients with acute pancreatic disease and with localized disease of the pancreas.

The isotope-labeled protein digestion test offers a simple accurate method of confirming the presence of pancreatic insufficiency with the facilities of a simple isotope laboratory as the only requirement. The test is of particular diagnostic value in the study of patients with diarrhea of undetermined origin and those with obstructive jaundice. It is a simple means of confirming the diagnosis of pancreatic insufficiency. There are no reliable laboratory methods available for the diagnosis of localized disease unassociated with pancreatic duct obstruction.

In an addendum the authors report on additional pancreatic function tests that were performed with the aid of the same technique in 21 patients. Ten of these patients had normal absorption curves, with a clinical diagnosis of acute pancreatitis in 4, and in 1 each of chronic pancreatitis, carcinoma of the body of the pancreas, common duct stone, gastric ulcer, pseudocyst of the pancreas, and ulcerative colitis. The remaining 11 patients had abnormal absorption curves, with clinical diagnosis of calcified pancreas in 2, pseudocyst of pancreas in 2, atresia of the common bile duct in 2, and in 1 each of diabetes mellitus with diarrhea, steatorrhea, carcinoma of the ampulla of Vater, carcinoma of the head of the pancreas, and pancreatic fistula.

SURGERY

Bronchial Blockage Test: Method of Estimating Risks of Pneumonectomy. M. Wenzl. Arch. chir. neerl. **8**:345-352 (No. 4) 1956 (In German) [Arnhem, Netherlands].

Pneumonectomy theoretically involves a reduction of the respiratory surface of the lung and of the vascular bed of the lesser circulation to about half, but the removal of a lung, the circulation of which is partly blocked, involves a lesser reduction of the respiratory function. Ascertaining the functional condition of the lung to be removed and of the other lung is important in evaluating the risk and the prognosis of pneumonectomy. The author, with Auerswald and Strahberger, devised a simplified method, which determines the functional adjustment of the unobstructed lung during blockage of the other lung. They call this the bronchial blockage test. It involves the introduction of a rubber cathether equipped with an inflatable rubber balloon. Under roentgenologic control the catheter is advanced into the main bronchus of the diseased lung so that the balloon is close to the ostium of the upper lobe. Through a secondary catheter the balloon is then filled with air or, better, with contrast medium. The degree of filling can be controlled by a secondary catheter. Readings are taken with a Brinkman's reflexion oximeter. If the absolute oxygen saturation has been established previously, the changes in saturation can be given in percentages.

The blockage test is repeated in the other main bronchus. An adequately trained team can complete the test in about 10 minutes. Since the end of 1954 the bronchial blockage test has been performed in 179 patients. The various degrees of arterial oxygen saturation that became evident during blockage of the diseased or the contralateral lung permit estimation of the functional adequacy of the lung remaining

after pneumonectomy. In 70% of the patients the typical trend in the arterial oxygen saturation made possible a favorable prognosis for pneumonectomy. To test the operative risk in the remaining patients, the 2-step blockage of the main bronchus and pulmonary artery was applied during operation. The increasing number of these tests led to a great decrease in the frequency of fatal cardiopulmonary complications in the total series of patients undergoing pneumonectomy and in the particularly jeopardized patients between the ages of 60 and 69. No deaths occurred in patients in whom the test indicated a favorable prognosis.

The Medicosurgical Problem of Acute Cholecystitis. O. F. Longo. Lyon chir. **53**:22-28 (Jan.) 1957 (In French) [Paris].

A series of 30 patients with acute cholecystitis was treated by medical and surgical means. Three patients did not undergo cholecystectomy; in 3 patients the operation was performed during the acute attack of cholecystitis; and 24 patients were subjected to interval cholecystectomy, in one of whom a second operation was necessary. Of the patients operated on in the acute stage of gallbladder disease 1 had perforation of the peritoneum, 1 sloughing of the gallbladder wall, and 1 erroneous diagnosis. Four of the patients operated on in the nonacute stage of gallbladder disease had stones in the common biliary duct, and 5 had functional disorders. No death occurred. The result of cholangiography and cholangiomanometry should be carefully considered before the decision to operate is made. These methods of examination aid in the detection of common duct stones, which are frequently associated with acute cholecystitis. The author recommends medical treatment if the diagnosis is definite, if the severity of the symptoms is not increasing, and if no complications are present.

Ligation of the Hepatic Duct in the Treatment of Cirrhosis of the Liver (Schalm's Operation). H. R. Bax. Arch. chir. neerl. **8**:331-334 (No. 4) 1956 (In English) [Arnhem, Netherlands].

Bax reviews animal experiments on the basis of which it was decided to ligate the hepatic duct in the treatment of human cirrhosis of the liver. Hepatic duct ligation was developed by Schalm. Observations are presented on 6 patients in whom this operation was performed. Satisfactory results were obtained in 2, 1 of whom had been reported on in 1956 in an American publication (*Gastroenterology*). The results in these 2 cases encouraged further attempts with hepatic duct ligation. The other 4 cases, however, emphatically demonstrate the hazards entailed in this operation, that is, the possibility of an erroneous or incomplete diagnosis and the danger of technical errors, particularly a wrongly placed ligation and a fatal hemorrhage.

While the surgical approach is kept abdominal as long as possible, before a ligation is made, a separation between the passages and the vessels should be established. Good surveyability is imperative, because it is often necessary to bring the hepatic hilus within easier reach of the eye and hand. A thoracotomy is then performed, and the liver is "tipped over" into the thorax. Of the 2 hepatic ducts, the left one was preferred by the author and his associates (Schalm and others), because they reasoned that this would leave the larger part of the liver intact, but the right hepatic duct may prove to be preferable in the future in order to ensure the most intensive stimulation to regeneration. No definite choice can be made until a much larger series has been collected. The ligation itself should be double and made with thick suture material. Severance of the bile duct is inadvisable as is puncture or opening (for intubation as an aid to orientation). All these moves increase the risk of biliary peritonitis. While it is hoped that this report will encourage further studies on the ligation of the hepatic duct, it should also serve as a warning that great caution is essential.

Decompression of the Fifth Lumbar Nerve and Intervertebral Body Fusion for Low Back Pain With Sciatic Radiation. F. W. Bailey. J. Internat. Coll. Surgeons **27**:160-169 (Feb.) 1957 [Chicago].

Patients who had low back pain with sciatic radiation were treated conservatively for from 2 weeks to several months if there was improvement. Chronic or recurring conditions were considered to indicate surgery if the pain was disabling. The disturbance of the intervertebral fibrocartilage may be but a part of a more general dysfunction involving the vertebrae and related structures. Bailey, therefore, advocates complete removal of the herniated or degenerated nucleus pulposus through an adequate exposure between the laminas. As a routine procedure both the 4th and 5th lumbar intervertebral spaces should be explored, and at the same time one should probe outward into the intervertebral foramen from each, feeling for any constriction or tissue that might compress the nerve in the foramen and might explain the persistence of pain after removal of the intervertebral fibrocartilage. If probing or direct observation leaves any uncertainty that there is sufficient room, uncapping the intervertebral foramen or decompressing the nerve is to be carried out by removing the inferior articular process of the vertebra above and that portion of the superior articular process of the vertebra below that overlies the nerve in the foramen. The nerve most commonly affected is the 5th lumbar nerve, which passes through the most constricted of the foramens. Twenty-five nerve-root decompressions were performed by the author in the course of the past 10 years. After the nerve root had been decompressed, there was improvement in that the pain and paresthesias subsided in time or were greatly relieved in all the patients.

Primary fusion is advocated when there is pain of long duration in the back or legs and there is roentgenographic or operative evidence of instability. The prefitted double-dowel type of intervertebral body fusion is the procedure of choice. The technique recommended is precision bone grafting, with accurate approximation of autogenous cancellous bone

procured from the posterior-superior portion of an iliac spine. The desirable effect of contact compression on osteogenesis is used in this type of fusion. The loss of blood is minimal, for the incision of the donor site is small and can be easily closed. Bleeding from the drill holes between the vertebrae is slight, and the dowel, when placed in the hole and locked into position, prevents excessive bleeding. This technique was used with best results in 15 patients. The required postoperative care, length of confinement in the hospital, and the period of immobilization were thereby reduced. Patients engaged in heavy labor were able to return to work 6 months after the operation; 1 patient, a clerical worker, returned to her employment at the end of 3 months. Earlier mobilization is considered to be due in part to severance of pain fibers in the anterior longitudinal ligament at the time the protruded nucleus pulposus is excised.

NEUROLOGY & PSYCHIATRY

Hypnocephalaea Clinostatica: Migrainous Morning Headache. T. Dalsgaard-Nielsen. Ugesk. læger **118:** 1541-1545 (Dec. 27) 1956 (In Danish) [Copenhagen].

The term "hypnocephalaea clinostatica" is proposed for the morning headache that is present on the patient's awakening after sleeping in a horizontal position. It is monophasic and identifiable on percutaneous nitroglycerine test as vasodilative and is ascribed to the clinostatic condition, the changes dependent on sleep, and certain tendencies in the biological mode of reaction of migraine patients, including the low threshold for vasodilator headache. Morning headaches are frequent in migraine patients and are often interpreted by them as attacks of migraine. Elevating the head of the bed 20 cm. has often proved effective. In some patients shortening of the duration of sleep has prevented the development of headache on awakening. Giving 1 tablet of ergotamine tartrate at bedtime in order to raise the headache threshold by increasing vascular tone in a number of patients insured that they awakened without a headache.

Neurological Guides to Prognosis in Asphyxia and Anoxia. I. M. Tarlov and D. Brace. Neurology **7:**75-85 (Feb.) 1957 [Minneapolis].

The authors aimed to establish prognostic criteria in respiratory arrest or obstruction occurring during or immediately after operations. This paper is a progress report. Neurological studies on 6 patients led to conclusions that seem to apply to patients suffering from cardiac arrest or anoxia from other causes. The occurrence of fixed and dilated pupils and generalized extensor rigidity indicates a severe irreversible degree of neuronal damage at the brain stem level and is incompatible with survival. The appearance of either fixed and dilated pupils or marked generalized extensor rigidity alone is of grave prognostic significance. Such patients may survive, but serious sequelae may appear. Delayed awakening from anesthesia or asphyxia, without abnormal neurological signs other than mental confusion or impaired memory, indicates mild reversible damage at a superficial cortical level, and full recovery may be expected. Prognosis is less certain in the intermediate group of patients who show abnormal motor or sensory signs. Survival usually occurs in these patients; and, although there may be improvement that may continue for months, serious sequelae, such as impaired mentality or vision, ataxia, and motor or sensory abnormalities, may persist. Coma that is prolonged more than 2 or 3 days is of grave significance and is often followed by death or serious neurological after-effects.

GYNECOLOGY & OBSTETRICS

Labour Following Previous Cæsarean Section. M. R. Narvekar. J. Obst. & Gynæc. India **7:**115-133 (Dec.) 1956 (In English) [Bombay, India].

Of 55 pregnant women with a history of previous cesarean section who were admitted to a maternity hospital, 30 had a vaginal delivery and 25 had a cesarean section. Of the 30, 28 had a normal delivery and 2 were delivered by forceps. Of the 25, 20 had a lower segment section and 5 had a classic section. Eight of the 55 women gave a history of more than 1 previous section. One of the 8 women delivered a fully mature infant vaginally within a few minutes of admission. The repeated section was a lower segment section in 4 of the remaining 7 patients, and none of the 4 could be sterilized because either only one or no child from the previous pregnancies had survived. The other 3 in whom the section was classic were sterilized simultaneously. Simultaneous sterilization is almost the only indication for classic section. Of 41 women supposed to have been subjected to previous cesarean section because of cephalopelvic disproportion, 18 were delivered vaginally. While real disproportion is likely to persist in subsequent labors, inefficient uterine action and persistent occipitoposterior presentation, which might have been labeled previously as failure of trial of labor due to cephalopelvic disproportion, are not usually expected to recur. Of the 25 women subjected to repeated section, 16 had it performed without trial of labor and 9 after failure of such a trial. Seven of the 9 were allowed to proceed until the membranes ruptured, and the other 2 were sectioned without waiting for this occurrence because fetal distress developed in 1 and the cord was found presenting in the other. Of the 18 patients who had been sectioned previously for cephalopelvic disproportion and who were delivered vaginally, 3 had a premature delivery, and, hence, there was no difficulty in deciding against a repeated section. Eight others were admitted with the head engaged in the pelvis, and, since there was no midcavity or outlet contraction, these too were allowed to deliver vaginally. The head of the infant was floating on admission in the remaining 7 women with doubtful disproportion, and, hence, they were subjected to a successful trial of labor.

Vaginal delivery can be undertaken with reasonable safety in selected patients with a history of previous cesarean section. The policy of "once a cesarean section, always a cesarean section" is no longer tenable

despite the known lack of dependable criteria for the accurate evaluation of the scar. The rupture of a cesarean scar is not as great a catastrophe as a rupture of a previously uninjured uterus during obstructed labor, and, when it occurs, the maternal mortality associated with it is not greater than that which would result from routine repeated sections. The fact that most of the original cesarean sections are now lower segment sections further reduces the incidence of rupture as well as the danger of high fetal mortality associated with rupture of the scar of classic section. The availability of antibiotics and blood for transfusions has reduced the maternal mortality to almost zero in patients with rupture of a lower segment scar. The choice between vaginal and abdominal delivery should be made without undue prejudice due to the presence of the scar. The presence of the scar necessitates careful observation of the patient and having everything ready for immediate laparotomy and blood transfusion if the need should arise, but the scar is not a sufficient reason by itself for routinely performing another section. Every woman with a previous cesarean section requires complete reevaluation before the decision as to the method of delivery is made. This is particularly true in most cases in which the details of the previous trial labor, especially the duration of labor after the rupture of the membranes and the dilatation of the cervix at the time of section, are not available. No trial of labor should be considered a failure until the membranes have ruptured and no progress has occurred with regard to the descent of the head and the dilatation of the cervix during a reasonable period of observation. If, after a thorough clinical examination, x-ray pelvimetry, if possible, and consideration of the history, it is decided to perform another cesarean section, it should be done immediately after the onset of labor.

PEDIATRICS

A Long-Term Evaluation of the Juvenile Diabetic. T. H. Joos and J. A. Johnston. J. Pediat. **50**:133-137 (Feb.) 1957 [St. Louis].

The authors review observations on 150 patients in whom diabetes was diagnosed before the age of 15 years. They were followed in the department of pediatrics and later in the metabolism clinic of the Henry Ford Hospital in Detroit for periods of from 1 to 30 years. This report is particularly concerned with 44 patients, who were followed for more than 10 years after the initial diagnosis was established. Most of the patients had the advantage of intelligent cooperation from the parents. Vascular complications of diabetes developed in 26 of the 44 patients, whereas the remaining 18 were free from such complications. The first evidence of any complication appeared an average of 11 years and 8 months after the diagnosis of diabetes had been established. Retinopathy was observed in 18 patients, albuminuria (alone) in 7, Kimmelstiel-Wilson disease in 5, nephritis in 3, neuropathy in 2, hypertension in 1, and cataracts in 1. These complications varied as to severity and physical disability produced. Three patients died of Kimmelstiel-Wilson disease, and another with bilateral cataracts had such extensive retinal hemorrhages that the removal of the cataracts was not regarded as worth while.

That control of the diabetic state is of utmost importance in the prevention of serious vascular complications is proved by the following figures: Of 17 in whom control was good, 11 remained free of complications; of 10 in whom control was fair, 5 remained free; of 5 in whom control was fair to poor, 2 remained free; and, of 10 in whom control was poor, none remained free from complications. The authors believe that the controversy between "free" and "controlled" regimens in the management of the diabetic is swinging in favor of the controlled type because of the increasing number of reports that show the direct relationship between good control and a minimum of complications. To obtain this control, a diet allowing a moderate amount of carbohydrate can be used with success. There is an increased need for insulin and calories as growth progresses. A peak is reached at puberty, followed by a drop and, then, stabilization of both insulin and caloric requirements.

A Previously Unreported Acute Exanthem Resembling Scarlet Fever. M. D. Ames. A. M. A. J. Dis. Child. **93**:110-112 (Feb.) 1957 [Chicago].

Twenty-three orthopedic patients between the ages of 4 and 12 years in a state hospital for crippled children, 2 house officers, 2 nurses, and the wife and 2 children of one of the house officers were infected with an apparently new disease. The constant manifestations of this disease were fever, sore throat, and a generalized, diffuse, finely papular, and bright-red erythema resembling scarlet fever. This erythema was present over the entire body, neck, and extremities and was particularly pronounced in the inguinal regions and over the anterior trunk. There was no desquamation. The fever lasted from 36 hours to 4 days, the sore throat 2 or 3 days, and the rash from 36 hours to 5 days. All patients were completely well subjectively and objectively and with regard to laboratory tests 10 days after the onset. There were no complications. Three children were given acetylsalicylic acid; 20 were given procaine penicillin and acetyl sulfisoxazole; and 7 were given tetracyclines. The course of the disease was not influenced by medication. Throat cultures of 12 patients were performed for virus on tissue culture and for "A" beta-hemolytic Streptococcus on blood agar and broth, and all were negative. Throat cultures of an additional 11 patients were performed only for "A" beta-hemolytic Streptococcus on blood agar and broth, and they were negative likewise. Therefore, one must assume that the disease was not scarlet fever. It must be clearly distinguished from scarlet fever because of the hardship that would follow the erroneous diagnosis, causing loss of time at school for children and cutting adults off from necessary income.

BOOK REVIEWS

Fundamentals of Clinical Fluoroscopy with Essentials of Roentgen Interpretation. By Charles B. Storch, M.D., Associate Attending Roentgenologist, Radiodiagnostic Department, Beth-El Hospital, Brooklyn, N. Y. Second edition. Cloth. $8.75. Pp. 305, with 318 illustrations. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1957.

In this new edition of an excellent and popular textbook, there are new chapters on the fluoroscopic examination of the heart for congenital conditions, of the small intestine and the gallbladder, and of the intestines for obstruction. Material has been added to the original chapters on basic concepts, mechanics, protection and dark adaptation, and fluoroscopy of the chest, heart, pharynx, esophagus, stomach, and colon. The added material is pertinent and has not made the book unwieldy. Numerous illustrations are reproduced in the same tone as that seen during fluoroscopy. Unfortunately, those depicting the fluoroscopic screen, contrary to the author's exhortations, are seen with a wide-open shutter. Well-chosen line drawings are presented. The various techniques are described and explained in an interesting, provocative way that makes for easy reading. A proper relationship of fluoroscopy to the roentgenogram is clearly expressed, as are the dangers and pitfalls of this modality. The brevity of the discussion of interpretation of roentgenograms is highly desirable inasmuch as this is a treatise on fluoroscopy. The volume is not intended to teach fluoroscopy in itself, but it is designed to give sufficient background to make fluoroscopy intelligible. This objective is attained admirably. The book should continue to have a wide appeal to the medical profession. It should be read and studied by anyone who expects to perform fluoroscopic examinations.

New Problems in Medical Ethics. Third Series. Edited in English by Dom Peter Flood, O.S.B., B.A., M.D. Translated from the French "Cahiers Laënnec" by Malachy Gerard Carroll. Cloth. $4.50. Pp. 299. Newman Press, Westminster, Md., 1956.

This collection of essays and papers by French theologians presents the position of the Catholic church on the ethical-moral aspects of six problems, five of which are of definite interest to the medical profession. These problems are not new, and the conclusions expressed are in accord with the traditional position of the Catholic church. Nonetheless, the book possesses a freshness of approach in its discussion on psychoanalysis, castration, pain, euthanasia, psychasthenia, and the indissolubility of the marriage bond. These controversial subjects are discussed objectively and without argumentation. In essence, the book presents a point of view on the moral aspects of certain subjects and explains the reasons therefor. The simplicity of approach to and the clarity of expression of historical, medical, and moral reasons for the given position enable one to read without antagonism and to appreciate without capitulation. Each problem is considered separately. Following the introduction, the historical, medical, and moral aspects of the subjects are discussed or analyzed in a series of commendably short but adequate papers. Perhaps it is indicative of the universality of problems of medical ethics that the book lacks any taint of provincialism. Passages that remind the reader that the essayists are of another continent where customs and problems might reasonably be expected to differ from our own are rare. The discussions of euthanasia and psychoanalysis and the historical discussion of castration are especially well done. The discussion of the indissolubility of the marriage bond, although perhaps of more general interest, seems somewhat out of place here.

The Head and Neck in Roentgen Diagnosis. Volumes I and II. By Eugene P. Pendergrass, M.D., Professor of Radiology and Chairman of Department of Radiology, University of Pennsylvania, Philadelphia, J. Parsons Schaeffer, M.D., Ph.D., and Phillip J. Hodes, M.D., Professor of Radiology, University of Pennsylvania. Second edition. Cloth. $37.50. Pp. 878; 879-1759; [xcvi], with 1740 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 24-25 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, Canada, 1956.

Since the publication of the first edition in 1940, this work has become a classic. The second edition, greatly enlarged, appearing in two volumes and in a changed format, represents one of the most comprehensive and most informative works ever published in in the field of roentgenology. The subject matter has been revised, rearranged and in part rewritten, and many sections have been extended in keeping with advances made in medical roentgenology in the past decade. It is difficult to conceive of any abnormality within the head and neck or anything of importance that has not been discussed in these two volumes. The illustrations are excellent and include not only well-chosen reproductions of roentgenograms but photographs, anatomic drawings, and line sketches. They deserve special praise by reason of their clarity, scope, completeness, and usefulness. Normal roentgenologic anatomy and normal variants are described completely and illustrated. To assist the reader in locating subject matter readily, pertinent running heads are found on all right-hand pages, a complete index is printed in each of the two volumes, and there is cross-indexing as well as indexing of pertinent illustrations.

For several years roentgenologists and physicians interested in diseases of the head and neck have anxiously awaited this second edition. It is now available and surpasses all expectations. The authors and publisher have done a magnificent job. This book, containing such a wealth of material, cannot be recommended too highly. Neurosurgeons, otolaryngologists, and all physicians concerned with diseases of the head and neck should find it a storehouse of information.

These book reviews have been prepared by competent authorities but do not represent the opinions of any medical or other organization unless specifically so stated.

QUERIES AND MINOR NOTES

POLIOMYELITIS VACCINE SCHEDULE

To the Editor:—*Two children received their three injections of poliomyelitis vaccine at widely separated intervals. The first injection was given when the vaccine was first released in April, 1955, the second in February, 1956, and the third in January, 1957. Should these children be considered immunized, or should the last injection be considered as the first of a new series and two further injections be given at appropriate intervals?*

M.D., Louisiana.

This inquiry was referred to two consultants, whose respective replies follow.—Ed.

Answer.—These two children can be considered to have had an adequate primary course of inoculations. The optimal primary course of poliomyelitis vaccine consists of three inoculations, the first two given no less than one month apart and the third given six or more months after the second. It is possible that periodic "booster" inoculations at regular intervals will be necessary. At present, there is not sufficient information available on which to base a recommendation about the use of such periodic boosters.

Answer.—These children should be considered immunized, since the vaccines employed were post-field-trial materials and the intervals between inoculations were not too short. That they were longer than the minimal is, in fact, somewhat advantageous.

AFEBRILE SWEATING DURING ILLNESS

To the Editor:—*What are the physiological causes and clinical significance of profuse sweating accompanying cerebral accidents and other grave illnesses that are not attended by fever?*

E. R. Kaback, M.D., Otisville, N. Y.

This inquiry has been referred to two consultants, whose respective replies follow.—Ed.

Answer.—Afebrile sweating is not an unusual clinical phenomenon. It occurs in thyrotoxicosis; acromegaly; after injections of Pituitrin; in the cutaneous vasoconstriction accompanying nervousness, fear, or fatigue; in "gustatory sweating" following ingestion of highly spiced food; and in shock associated with myocardial infarction, pulmonary embolism, or cerebral accidents.

The profuse sweating accompanying afebrile cerebral accidents is ascribable to the discharge of impulses arising in the motor cortex with axon stimulation of the diencephalon. Like any other symptom complex occurring in patients with cerebrovascular disease, the sweating phenomenon is difficult to evaluate, since it can be associated with such diverse changes as edema, perivascular and perineural cellular infiltration, or foci of cerebral ischemia and necrosis.

Various afebrile syndromes characterized by profuse sweating, pallor, nausea, weakness, and fall in blood pressure can be attributed to reflex stimulation of the autonomic nervous system, with liberation of acetylcholine. It is well known that acetylcholine and its congeners have a marked effect upon glandular secretions, particularly those of sweat, salivary, or lacrimal origin. This mechanism explains the sweating frequently associated with paroxysmal tachycardias, anginal episodes, vasovagal syncope, postural hypotension, and the carotid sinus syndrome.

Answer.—The causes of sweating without increase in temperature that may accompany cerebral accidents or other grave illnesses may be similar to those that may produce sweating in normal individuals. Stimulation of the sweat glands occurs during sleep because vasomotor reflexes are more active. Nervousness, fear, fatigue, or anxiety may produce cold sweat. In severe disease, additional stimulation of the sympathetic nervous system may account for sweating. Acetylcholine, pilocarpine, or other drugs may produce sweating. Stimulation or irritation of the hypothalmic area or destruction of the pyramidal tracts may produce sweating below the level of lesion. There is no clinical interpretation of the occurrence of sweating that would have special diagnostic or prognostic significance in the presence of grave disease.

USE OF VITAMIN B_{12} AFTER GASTRECTOMY

To the Editor:—*A patient who had four-fifths of her stomach removed thinks that she cannot take vitamin B_{12}. Is there any allergic reaction to vitamin B_{12} or contraindication to its use when it is given hypodermically? Does the removal of the stomach actually contraindicate use of vitamin B_{12}?*

C. L. Lester, M.D., Chautauqua, N. Y.

This inquiry was referred to two consultants, whose respective replies follow.—Ed.

Answer.—Experiences in several quarters have indicated a natural interest in the administration of vitamin B_{12} after partial and total gastrectomy. The indication for administration would rest principally on the type of anemia present. The megaloblastic anemia that follows total gastrectomy has been found to respond nicely. Hyperchromic (iron-deficiency) anemia, of course, requires addition of orally or intravenously given iron preparations. When vitamin B_{12} is given orally, greater absorption can be rendered with the addition of normal gastric juice to the diet. Also, adjuvant administration of folic acid has been helpful. There would seem to be no contraindication to the

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hypodermic injection of purified vitamin B_{12}, since a review of the literature up to 1954 showed no allergic or toxic affects found in the clinical administration of crystalline vitamin B_{12}. This was found to be true even in patients showing severe sensitivity reactions to both purified liver extracts and fermentation concentrates. Finally, iron-deficiency anemia is far more frequent than megaloblastic anemia after subtotal gastrectomy, with consequent poor protein intake. In the event that the patient did not respond well to iron and nutritional supplements, it might be in order to administer vitamin B_{12} in its crystalline form.

ANSWER.—Vitamin B_{12} has been widely used in the treatment of pernicious anemia and is administered principally by injection. There has been no indication of an allergic reaction when solutions of the crystalline vitamin have been employed in the usual dosages. The biochemical defect that results in pernicious anemia is failure to secrete into the stomach a substance called "intrinsic factor" that appears to be protein in nature and that is essential for absorption of vitamin B_{12} through the intestinal wall. Removal of the stomach, or a large part of it, would make it important to provide vitamin B_{12} to the blood stream, since the normal route of assimilation is altered.

TEMPERATURE AND ACTIVITY OF RHEUMATIC FEVER

TO THE EDITOR:—*A 10-year-old boy with rheumatic fever has been on a regimen of complete bed rest for several months and is now asymptomatic except for a questionable low-grade fever. All his laboratory tests and his electrocardiogram returned to normal long ago, but he has continued to run a low-grade fever orally. His rectal temperatures were checked to see whether he would show any fever when his temperature was taken by this means, which presumably is more accurate and gives results one degree higher than the oral temperature. A marked discrepancy was noted. Can this be explained? Attempts were made to rule out errors such as result from the patient's taking a cold drink or breathing through his mouth. Representative Fahrenheit temperatures were as follows (rectal equivalents in parentheses): 98.6 (99.1); 99.2 (99.9); 99.3 (99.6); 99.3 (99.8); 99.4 (99.6); 98.6 (99.2); 98.6 (99.0). Would this patient be considered febrile?*

H. H. Howard, M.D., Lawton, Okla.

ANSWER.—Rectal temperature is usually said to be one degree Fahrenheit higher than the oral temperature, although ranges of only 0.7 to 0.9 F are frequently encountered. Studies of a large population of normal individuals show oral temperatures ranging from 97.0 to 100.4 F. Values above 99.4 orally and 100.3 rectally would be considered febrile, with perhaps 5% chance of error in this respect.

The patient mentioned in the query would seem to be afebrile, and the reason that there is not a greater difference between oral and rectal temperatures is not apparent. If a normal response to other tests for rheumatic fever activity should be obtained, the "fever" as a measure of activity would seem to be excluded.

Other tests to determine activity of rheumatic fever might be employed. In this instance an antistreptolysin titer of less than 200 units by the Rantz and Randall method and the disappearance of C-reactive protein in the serum indicate absence of rheumatic fever activity. Return of the P-R interval to less than 0.22 seconds and normalization of other electrocardiographic abnormalities, return of the sedimentation rate to less than 15 mm., and a return of the white blood cell count to normal also help rule out activity of rheumatic fever. If the pulse rate does not rise beyond 100 per minute within one minute after a standard exercise test such as described by Karpovich and co-workers (*J. A. M. A.* 130: 1198-1203 [April 27] 1946), that would be considered as additional evidence of absent rheumatic fever activity.

PROGNOSIS WITH COMPLETE HEART BLOCK

TO THE EDITOR:—*A 72-year-old patient has the slow heart rate of 28 beats per minute that is characteristic of a complete heart block. The important feature of the electrocardiogram is that the ventricular complexes arise from different foci. This would suggest that there may be at times a period of asystole in the changeover from one focus to another. His blood pressure is 186/80 mm. Hg. There are no signs of congestive heart failure. The heart is enlarged, which is to be expected as the blood pressure increases. What is the prognosis as to life expectancy?*

M.D., New York.

ANSWER.—The prognosis for such a patient cannot be given. However, with multiple foci, it would appear that the dependability of the idioventricular rhythm is not as great as from a single focus. The prognosis of complete heart block is grave, with the majority of the patients dying within a year.

ATROPINE FOR PREOPERATIVE MEDICATION

TO THE EDITOR:—*Is there any contraindication to the use of atropine in preoperative medication? Is there a significant difference in the use or safety of scopolamine? This refers chiefly to the use of these drugs in adults undergoing general surgery, but please indicate as well the current opinions concerning their use in the surgical treatment of congenital heart defects.*

M.D., Connecticut.

ANSWER.—There are relatively few contraindications to the use of atropine as a premedicant. In patients with fever, administration of the drug even in the usual doses may lead to a further rise in temperature because of depression of the sweating mechanism. Elevation of intraocular fluid pressure in glaucoma by atropine makes caution necessary in its use in the presence of this condition; however, the mydriatic effect of atropine is much less marked when it is given intramuscularly in ordinary doses than when it is applied directly to the eye. Atropine is not recommended for routine use in surgical treatment of either congenital heart defects or mitral valvular disease, because the tachycardia that may result produces a decreased diastolic filling and output of the left ventricle, thus throwing a burden on the pulmonary circulation, which may precipitate pulmonary edema.

Scopolamine differs from atropine in that it exerts a depressant effect on the central nervous system, whereas atropine stimulates the medulla and higher cerebral centers. Peripherally, scopolamine has a greater effect than atropine on the iris, ciliary body, and certain secretory glands. Atropine, however, possesses a stronger vagolytic activity and a more profound effect on the intestine and bronchiolar muscle. Scopolamine is not recommended for geriatric or pediatric patients, since either extreme agitation or marked depression may result. When used without suitable analgesic agents in patients with severe pain, scopolamine may produce restlessness and agitation. When combined with adequate analgesia, however, its use is less hazardous. Because it does not cause central depression, atropine is generally more widely used than scopolamine as premedication, except in specific conditions in which depression is desired.

PHLEBITIS AFTER SKIING

To the Editor:—*In Queries and Minor Notes in* The Journal *for Dec. 29, 1956, page 1675, a question pertaining to a patient who came down with acute iliofemoral thrombophlebitis after strenuous skiing was published. The consultant states that no similar cases had been encountered by him, nor had he seen a description of the condition in the literature; he writes that this may be due to the fact that the sport attracts healthy, young participants; but the assumption is made that phlebitis can be caused either directly by trauma or indirectly by effort.*

The issue under discussion, viz., that of venous thrombosis following effort, has been described in a monograph on the clinical physiology of exercise (Jokl, Syncope in Athletes, Pretoria, Union of South Africa, 1947). I have seen a patient in whom the left arm was swollen and red and the superficial veins of the chest wall on the left were engorged 24 hours after a weight-lifting contest. Thrombosis of the left axillary vein was found to be the cause. M. Suzman (personal communication) saw two corresponding cases during the war. Keener and associates (U. S. Nav. M. Bull. **40**:687, 1942) *recorded that effort thrombosis was first described by Von Schroetter in 1884 and that up to 1942 over 100 cases had been published.*

Effort thrombosis is occasionally seen in patients with a history of rheumatic fever in whom the affliction may be caused by strenuous exercise or by minor traumas. I have described the case of a youth, aged 17, who during a football game collided with another player. A fortnight later he became delirious, developed neck rigidity and pneumonia followed by endocarditis, and died within three days. Autopsy revealed a fresh, large, crumbling thrombotic mass protruding from the ventricular surface of the anterior curtain of the mitral valve. A small ruptured aneurysm was found beneath the thrombosis.

The question under review is of twofold significance. First, it is desirable that the clinical syndrome of venous thrombosis following effort be more generally known. Secondly, the evidence once more emphasizes the categorical importance of the thesis that Welch formulated in 1897 in "Adaptation in Pathological Processes" (Baltimore, Johns Hopkins Press, 1937). I have drawn attention to this classic contribution before in the Queries and Minor Notes section of The Journal *(***161**:*1520 [Aug. 11] 1956).*

The assumption made by the consultant that, because "the sport attracts healthy young participants," it is not likely that pathological conditions will manifest themselves as a result of the stress of physical exercise needs qualification. Athletic performances of a high standard denote a satisfactory state of physical efficiency but nothing else. A great variety of pathological processes may be present in athletes. They need not interfere with the physical activities, although it is essential that they are diagnosed with the help of the accepted procedures of clinical medicine. The impact of the short-term and long-term physiological adjustments that accompany exercise and training upon such pathological processes as are encountered in seemingly healthy and physically fit subjects represents the central scientific issue of sports medicine.

Ernst Jokl, M.D.
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Lexington.

The above comment was referred to the consultant who answered the original query, and his reply follows.—Ed.

To the Editor:—*Effort thrombosis (first described by Paget in 1875 and by Von Schroetter in 1884) has become so well known that Hughes, in 1949, could write a collective review of 320 such cases confined to the upper extremity alone* (Internat. Abstr. Surg. **88**:89, 1949; in Surg. Gynec. & Obst., Feb., 1949). *The reply to the query referred chiefly to effort thrombosis secondary to skiing, and it is interesting that the case reported in the original query is the only one of which this consultant had either direct or indirect knowledge. To date, one answer to the request for such case reports has been received. Dr. Alfred Ebel, Chief of the Physical Medicine and Rehabilitation Service of the Veterans Administration Hospital of the Bronx, New York, described in a letter several cases of effort thrombosis following calisthenics, but he had no experience with phlebitis secondary to skiing.*

Effort thrombosis has been seen in almost all types of sports activity and should be seen in the rather vigorous sport of skiing. Either cases are not being reported or there is something different about the participants. There is the possibility that skiers are younger and therefore have more elastic vascular systems that can withstand unusual strains better than the vascular systems of older people. Again, it would be appreciated if case reports of phlebitis occurring after skiing would be sent to John J. Byrne, M.D., Director, Third (B. U.) Surgical Service and Research Laboratory, Boston City Hospital, 818 Harrison Ave., Boston 18.